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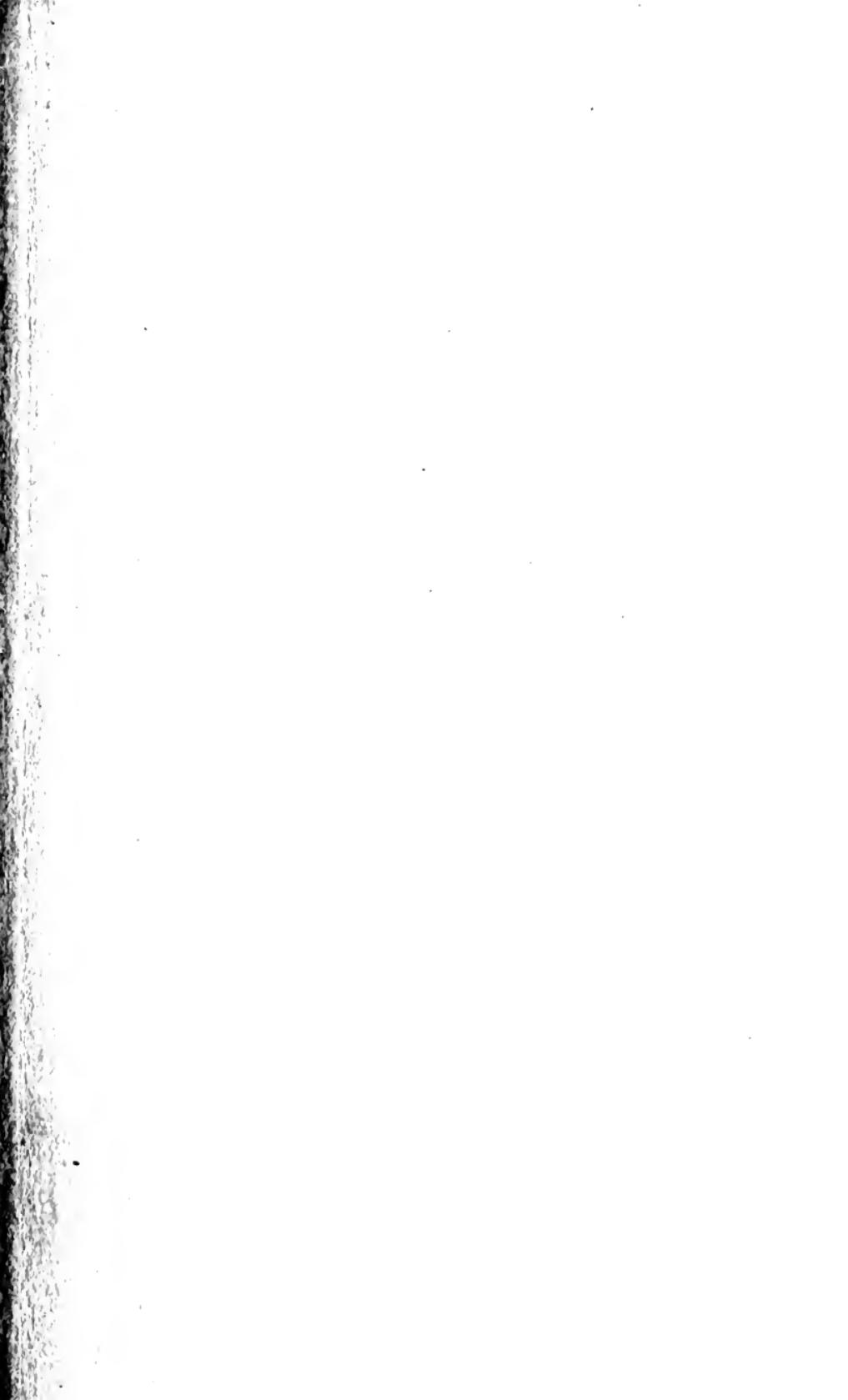
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140 ENGRAVINGS.

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Luther Tucker &  
No. 27.

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BY J. J. THOMAS.

AUTHOR OF THE 'AMERICAN FRUIT CULTURIST,' AND 'FARM IMPLEMENTS,'  
ASSOCIATE EDITOR OF THE CULTIVATOR & COUNTRY GENTLEMAN.

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ALBANY, N. Y.:  
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THE  
CULTIVATOR ALMANAC  
FOR 1881.

ASTRONOMICAL CALCULATIONS IN EQUAL OR CLOCK TIME.

ECLIPSES FOR THE YEAR 1881.

**T**HREE WILL BE FOUR ECLIPSES this year, two of the Sun and two of the Moon, and a Transit of the planet Mercury over the disk of the Sun.

**I.** A Partial Eclipse of the Sun, May 27; invisible at Boston, New-York, Washington, and other places near the meridian of Washington, because the Sun will set before the Eclipse begins. At Cincinnati, the Eclipse begins at 7.14 P. M., and the lower limb of the Sun begins to set at 7.13 P. M.; a very brief Eclipse may therefore be seen. At Chicago the Eclipse begins at 6.57 P. M.; the remaining phases occur after sunset.

**II.** A Total Eclipse of the Moon on the evening of June 11, and morning of June 12, visible throughout the United States, as follows:

At Washington: begins, 0.03; total begins, 1.05; middle, 1.46; total ends, 2.26; Eclipse ends, 3.28.

At Boston: begins, 0.27; total begins, 1.29; middle, 2.10; total ends, 2.50; Eclipse ends, 3.52.

At New-York: begins, 0.15; total begins, 1.17; middle, 1.58; total ends, 2.39; Eclipse ends, 3.41.

For Albany the phases are 1m. later than for New-York City. For Philadelphia, about 5m. earlier than for New-York.

At Buffalo: begins, 11.55; total begins, 0.57; middle, 1.38; total ends, 2.19; Eclipse ends, 3.21.

At Cincinnati: begins, 11.33; total begins, 0.35; middle, 1.16; total ends, 1.56; Eclipse ends, 2.58.

At Chicago: begins, 11.20; total begins, 0.23; middle, 1.04; total ends, 1.44; Eclipse ends, 2.46.

At New-Orleans: begins, 11.11; total begins, 0.13; middle, 0.54; total ends, 1.34; Eclipse ends, 2.36.

At San Francisco: begins, 9.01; total begins, 10.03; middle, 10.44; total ends, 11.25; Eclipse ends, 0.27.

**III.** An Annular Eclipse of the Sun, November 21; invisible in the Northern Hemisphere.

**IV.** A Partial Eclipse of the Moon, December 5; invisible in the United States.

V. A Transit of Mercury over the Sun's disk, November 7. The Ingress of the planet on the Sun's disk is visible in the western portion of the United States as follows: At Ann Arbor Observatory, Mich., 4h. 41m. 6s. Cincinnati New Observatory, 4h. 38m. 15s. Chicago Observatory, 4h. 25m. 36s. Charleston, S. C., 4h. 56m. 9s. Tuscaloosa, Ala., 4h. 25m. 7s. St. Louis, 4h. 14m. 58s. New-Orleans, 4h. 15m. 54s. San Francisco, 2h. 6m. 17s. Egress after sunset in all parts of the United States.

### CHURCH DAYS AND CYCLES OF TIME.

Septuagesima Sun., Feb. 13	Easter Sunday, Apl. 17	Dominical Letter,...	B
Sexagesima " " 20	Low " " 24	Epact, .....	30
Quinquagesima " " 27	Rogation " May 22	Golden Number,.....	1
Ash Wednesday,.... Mar. 2	Ascension Day, " 26	Solar Cycle,.....	14
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Mid-Lent..... " 27	Trinity " .. 12	Julian Period,.....	6594
Palm Sunday,..... Apl. 10	Corpus Christi, " 16	Dionysian Period, 210	
Good Friday,..... " 15	Advent Sund'y, Nov. 27	Jewish Lunar Cycle, 17	

### THE FOUR SEASONS.

	H. M.	D. H. M.
Winter begins, 1880, December 21,	5 10 mo.,	and lasts 89 1 2
Spring do. 1881, March 20,	6 12 mo.,	do. 92 20 8
Summer do. 1881, June 21,	2 20 mo.,	do. 93 14 22
Autumn do. 1881, September 22,	4 42 eve.,	do. 89 18 10
Winter do. 1881, December 21,	10 52 mo.	Trop.year, 365 5 42

### MORNING AND EVENING STARS.

MORNING STARS.—Mercury, until Jan. 26; and from March 11 to May 17; and from July 17 to Aug. 31; and from Nov. 7 to the end of the year. Venus, after May 3 to the end of the year.

EVENING STARS.—Mercury from Jan. 26 to March 11; and from May 17 to July 17; and from Aug. 31 to Nov. 7. Venus until May 3.

### PLANETS BRIGHTEST.

On account of the strong twilight in which Mercury is always immersed, near sunrise or sunset, this planet will be taken to be *brightest*, or *best seen*, when farthest from the Sun, at its greatest elongation, as follows: Feb. 23, after sunset; April 7, before sunrise; June 20, after sunset; Aug. 6, before sunrise; Oct. 16, after sunset; Nov. 24, before sunrise.

Venus brightest, March 27 and June 9. Mars, Dec. 27. Jupiter, Nov. 13. Saturn, Nov. 1.

1ST MONTH.

## JANUARY, 1881.

31 DAYS.

MOON'S PHASES.		BOSTON.		NEW-YORK.		WASHINGTON		SUN ON MERID.		
	D.	H. M.		H. M.	H. M.		D.	H. M.	S.	
FIRST QUARTER,	7	3 25 mo.		3 13 mo.	3 1 mo.		1	12 4	6	
FULL MOON, ....	15	6 50 mo.		6 38 mo.	6 26 mo.		9	12 7	37	
THIRD QUARTER	23	4 4 mo.		3 52 mo.	3 40 mo.		17	12 10	33	
NEW MOON, ....	29	8 4 ev.		7 52 ev.	7 40 ev.		25	12 12	42	

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR					
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.		For New-York City, Phila- delphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.		For Washington, Maryl'd, Virginia, Kent'ky, Miss'ss., and California.		SUN		SUN		MOON			
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	SETS.	SUN RISES	SUN SETS.	MOON SETS.
1	S	H	M	H	M	H	M	H	M	H	M	H	M	H	M
2	B	7 30 4 38	6 19 ev.	42		7 25 4 44	6 25	9 28		7 19 4 49	6 28				
3	M	7 30 4 39	7 37	1 28		7 25 4 45	7 41	10 14		7 19 4 50	7 44				
4	T	7 30 4 40	8 53	2 14		7 25 4 46	8 55	11 0		7 19 4 51	8 57				
5	W	7 30 4 41	10 5	3 0		7 25 4 46	10 6	11 46		7 19 4 52	10 6				
6	T	7 30 4 42	11 14	3 46		7 25 4 47	11 13	ev. 32		7 19 4 53	11 12				
7	F	7 30 4 43	morn	4 33		7 25 4 48	morn	1 19		7 19 4 54	morn				
8	S	7 29 4 44	0 21	5 28		7 24 4 49	0 22	2 14		7 19 4 54	0 17				
9	B	7 29 4 45	1 27	6 26		7 24 4 50	1 24	3 12		7 19 4 55	1 21				
10	M	7 29 4 46	2 30	7 26		7 24 4 51	2 26	4 12		7 19 4 56	2 22				
11	T	7 29 4 47	3 30	8 22		7 24 4 52	3 26	5 8		7 19 4 57	3 21				
12	W	7 28 4 48	4 27	9 17		7 24 4 53	4 23	6 3		7 19 4 58	4 17				
13	T	7 28 4 49	5 19	10 10		7 23 4 54	5 14	6 56		7 18 4 59	5 8				
14	F	7 28 4 51	6 4	11 0		7 23 4 56	6 0	7 46		7 18 5 0	5 54				
15	S	7 27 4 52	6 46	11 43		7 22 4 57	6 40	8 29		7 18 5 1	6 35				
16	B	7 27 4 53	rises.	morn		7 22 4 58	rises.	9 4		7 17 5 3	rises.				
17	M	7 26 4 54	6 23	0 18		7 22 4 59	6 27	9 37		7 17 5 4	6 31				
18	T	7 26 4 55	7 25	0 51		7 21 5 0	7 27	10 12		7 17 5 5	7 29				
19	W	7 25 4 57	8 25	1 26		7 21 5 1	8 27	10 48		7 16 5 6	8 28				
20	T	7 24 4 58	9 28	2 2		7 21 5 2	9 28	11 26		7 15 5 7	9 28				
21	F	7 24 4 59	10 30	2 40		7 20 5 3	10 30	morn		7 15 5 8	10 29				
22	S	7 23 5 0	11 35	3 21		7 20 5 5	11 33	0 7		7 14 5 9	11 31				
23	B	7 22 5 2	morn	4 6		7 19 5 6	morn	0 52		7 14 5 10	morn				
24	M	7 22 5 3	0 42	5 0		7 18 5 7	0 40	1 46		7 13 5 11	0 36				
25	T	7 21 5 4	1 53	6 3		7 17 5 8	1 48	2 49		7 12 5 13	1 43				
26	W	7 20 5 6	3 0	7 18		7 16 5 9	2 57	4 2		7 12 5 14	2 51				
27	T	7 19 5 7	4 8	8 27		7 15 5 11	4 3	5 13		7 11 5 15	3 57				
28	F	7 18 5 8	5 9	9 37		7 14 5 12	5 4	6 23		7 10 5 16	4 58				
29	S	7 16 5 9	6 0	10 43		7 13 5 13	5 56	7 29		7 10 5 17	5 51				
30	B	7 15 5 12	6 24	ev. 24		7 12 5 16	6 27	9 10		7 8 5 19	6 29				
31	M	7 15 5 13	7 44	1 4		7 11 5 17	7 42	9 50		7 7 5 21	7 43				

## Advertising in the Country Gentleman.

One of the best advertising mediums we have.—HEEBNER & SONS, *Horse Powers.*  
*Lansdale, Pa., Jan. 20, 1880.*

My last advertisement sold all the Poultry I had for sale.—M. O. STODDARD, *New-  
port, R. I., Jan., 1880.*

I received in response letters from as far north as Canada, south as Georgia, and west as  
Kansas, to say nothing of States nearer by.—W. L. BRADBURY, *Vason, Ia., Jan. 14, 1880.*

2d MONTH.

## FEBRUARY, 1881.

28 DAYS.

MOON'S PHASES.		BOSTON.		NEW-YORK.		WASHINGTON		SUN ON MERID.	
		D.	H. M.	H. M.	H. M.	H. M.	D.	H. M. S.	
FIRST QUARTER,	5	8	10 ev.	7	58 ev.	7	46 ev.	1	12 13 55
FULL MOON,....	14	1	40 mo.	1	28 mo.	1	16 mo.	9	12 14 28
THIRD QUARTER	21	2	46 ev.	2	34 ev.	2	22 ev.	17	12 14 11
NEW MOON,...	28	6	48 mo.	6	36 mo.	6	24 mo.	25	12 13 10

DAY OF MONTH.	CALENDAR								CALENDAR								CALENDAR							
	DAY OF WEEK.	For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryland, Virginia, Kent'ky, Miss'ry, and California.														
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.	H. W. M.											
1	T	7	13	5	14	8	53	1	47	7	10	5	18	8	53	10	33	7	6	5	22	8	53	
2	W	7	12	5	16	10	4	2	30	7	9	5	19	10	3	11	16	7	5	5	23	10	1	
3	T	7	11	5	17	11	12	3	15	7	8	5	21	11	11	ev.	1	7	4	5	24	11	7	
4	F	7	10	5	18	morn	4	1	7	7	5	22	morn	0	47		7	3	5	25	morn			
5	S	7	9	5	20	0	18	4	54	7	6	5	23	0	15	1	40	7	2	5	26	0	11	
6	<b>B</b>	7	8	5	21	1	21	5	51	7	5	5	24	1	17	2	37	7	1	5	28	1	12	
7	M	7	7	5	22	2	20	6	54	7	3	5	25	2	15	3	40	7	0	5	29	2	10	
8	T	7	5	5	24	3	14	7	53	7	2	5	27	3	9	4	39	6	59	5	30	3	3	
9	W	7	4	5	25	4	2	8	47	7	1	5	28	3	57	5	33	6	58	5	31	3	51	
10	T	7	3	5	26	4	44	9	40	7	0	5	29	4	39	6	26	6	57	5	32	4	34	
11	F	7	2	5	27	5	20	10	29	6	59	5	30	5	16	7	15	6	56	5	33	5	12	
12	S	7	0	5	29	5	51	11	13	6	57	5	32	5	49	7	59	6	54	5	34	5	45	
13	<b>B</b>	6	59	5	30	6	19	11	51	6	56	5	33	6	17	8	37	6	53	5	35	6	15	
14	M	6	57	5	31	rises.	morn	6	55	5	34	rises.	9	11			6	52	5	37	rises.			
15	T	6	56	5	33	7	23	0	25	6	54	5	35	7	21	9	42	6	51	5	38	7	21	
16	W	6	55	5	34	8	23	0	56	6	52	5	36	8	22	10	19	6	50	5	39	8	22	
17	T	6	53	5	35	9	28	1	33	6	51	5	38	9	27	10	59	6	48	5	40	9	24	
18	F	6	52	5	36	10	34	2	13	6	49	5	39	10	32	11	42	6	47	5	41	10	29	
19	S	6	50	5	38	11	42	2	56	6	48	5	40	11	39	morn		6	46	5	42	11	34	
20	<b>B</b>	6	49	5	39	morn	3	44	6	47	5	41	morn	0	30			6	45	5	43	morn		
21	M	6	47	5	40	0	50	4	41	6	45	5	42	0	46	1	27	6	43	5	44	0	40	
22	T	6	46	5	41	1	55	5	48	6	44	5	43	1	51	2	34	6	42	5	46	1	45	
23	W	6	44	5	43	2	56	7	4	6	42	5	45	2	51	3	50	6	40	5	47	2	45	
24	T	6	43	5	44	3	49	8	15	6	41	5	46	3	45	5	1	6	39	5	48	3	38	
25	F	6	41	5	45	4	34	9	21	6	39	5	47	4	31	6	7	6	38	5	59	4	27	
26	S	6	40	5	46	5	13	10	22	6	38	5	48	5	11	7	8	6	36	5	50	5	8	
27	<b>B</b>	6	38	5	48	5	46	11	15	6	36	5	49	5	45	8	1	6	35	5	51	5	43	
28	M	6	36	5	49	sets.	ev.	1	6	35	5	50	sets.	8	46			6	33	5	52	sets.		

We are surprised at the number of inquiries we have had for windmill circulars from every State, Canada and Nova Scotia.—H. C. FISH & CO., Worcester, Mass., Jan. 12, 1880.

The first insertion of Feb. 12th, brought us many inquiries and some orders for our galvanized wire nettings.—BROCKNER & EVANS, New-York.

We cheerfully recommend your valuable paper as the best advertising medium by far over all others.—D. & J. BANKER, Franklin Forks, Pa., Feb. 3, 1880.

I have sold out almost all the Jerseys and Ayrshires I had for Sale, and find an advertisement in *The Country Gentleman* worth more than in any half dozen other papers I know of.—J. H. JOHNSON, Talladega, Ala., Feb. 12, 1880.

3d MONTH.

MARCH, 1881.

31 DAYS.

MOON'S PHASES.			BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID.
	D.	H. M.	H. M.	H. M.	H. M.	D. H. M. S.
FIRST QUARTER, ....	7	3 18 ev.	3 6 ev.	2 54 ev.	1 12 12 26	
FULL MOON, ....	15	5 53 ev.	5 41 ev.	5 29 ev.	9 12 10 34	
THIRD QUARTER	22	10 46 ev.	10 34 ev.	10 22 ev.	17 12 8 20	
NEW MOON, ....	29	5 48 ev.	5 36 ev.	5 24 ev.	25 12 5 54	

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR														
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.		For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.		For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.																		
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.												
1	T	H 6	M 35	S 5	50	7	40	0	39	6	33	5	52	7	39	9	25	6	32	5	53	7	37	
2	W	H 6	M 33	S 5	51	8	51	1	18	6	32	5	53	8	49	10	4	6	31	5	54	8	47	
3	T	H 6	M 32	S 5	52	9	59	2	1	6	30	5	54	9	56	10	47	6	29	5	55	9	53	
4	F	H 6	M 30	S 5	54	11	5	2	45	6	29	5	55	11	1	11	31	6	28	5	56	10	57	
5	S	H 6	M 28	S 5	55	morn		3	31	6	27	5	56	morn	ev.	17		6	26	5	57	11	58	
6	<b>B</b>	H 6	M 27	S 5	56	0	8	4	23	6	26	5	57	0	3	1	9	6	25	5	58	morn		
7	M	H 6	M 25	S 5	57	1	5	5	19	6	24	5	58	1	0	2	5	6	23	5	59	0	54	
8	T	H 6	M 23	S 5	58	1	56	6	20	6	22	5	59	1	50	3	6	6	22	6	0	1	45	
9	W	H 6	M 22	S 6	0	2	40	7	19	6	21	6	0	2	35	4	5	6	20	6	1	2	30	
10	T	H 6	M 20	S 6	1	3	19	8	13	6	19	6	1	3	14	4	59	6	18	6	2	3	10	
11	F	H 6	M 18	S 6	2	3	52	9	3	6	18	6	3	3	49	5	49	6	17	6	3	3	45	
12	S	H 6	M 16	S 6	3	4	21	9	51	6	16	6	4	4	19	6	37	6	15	6	4	4	16	
13	<b>B</b>	H 6	M 15	S 6	4	4	48	10	37	6	14	6	5	4	46	7	23	6	14	6	5	4	45	
14	M	H 6	M 13	S 6	5	5	13	11	19	6	13	6	6	5	12	8	5	6	12	6	6	5	12	
15	T	H 6	M 11	S 6	7	rises.	11	56	6	11	6	7	rises.		8	42		6	11	6	7	rises.		
16	W	H 6	M 10	S 6	8	7	18	morn	6	9	6	8	7	17	9	18		6	9	6	8	7	16	
17	T	H 6	M 8	S 6	9	8	25	0	32	6	8	6	9	8	22	9	55		6	8	6	9	8	20
18	F	H 6	M 6	S 6	10	9	33	1	9	6	6	6	10	9	30	10	38		6	6	6	10	9	26
19	S	H 6	M 4	S 6	11	10	41	1	52	6	4	6	11	10	37	11	25		6	4	6	11	10	33
20	<b>B</b>	H 6	M 3	S 6	12	11	48	2	39	6	3	6	12	11	43	morn			6	3	6	12	11	38
21	M	H 6	M 1	S 6	14	morn		3	33	6	1	6	13	morn	0	19			6	1	6	13	morn	
22	T	H 5	M 59	S 6	15	0	49	4	32	5	59	6	14	0	44	1	18		6	0	6	14	0	39
23	W	H 5	M 57	S 6	16	1	44	5	41	5	58	6	15	1	39	2	27		5	58	6	15	1	34
24	T	H 5	M 56	S 6	17	2	30	6	53	5	56	6	16	2	26	3	39		5	57	6	16	2	21
25	F	H 5	M 54	S 6	18	3	10	7	59	5	54	6	17	3	7	4	45		5	55	6	17	3	4
26	S	H 5	M 52	S 6	19	3	44	9	0	5	53	6	19	3	42	5	46		5	53	6	18	3	40
27	<b>B</b>	H 5	M 50	S 6	20	4	15	9	55	5	51	6	20	4	14	6	41		5	52	6	19	4	8
28	M	H 5	M 49	S 6	21	4	44	10	47	5	49	6	21	4	47	7	33		5	50	6	20	4	45
29	T	H 5	M 47	S 6	23	sets.	11	34	5	48	6	22	sets.	8	20	5	49	6	21	sets.				
30	W	H 5	M 45	S 6	24	7	38	ev.	15	5	46	6	23	7	36	9	1	5	47	6	22	7	33	
31	T	H 5	M 43	S 6	25	8	46	0	52	5	45	6	24	8	43	9	38		5	46	6	23	8	39

I am very well pleased with the success of my advertisement.—E. M. BURCHARD, *Patentee Burchard's Butter Box, Washington, Feb. 27, 1880.*

My advertisement brought me many correspondents, and was quite profitable to me.—

A. LEIDA, *Delaware Station, N. J., Feb. 27, 1880.*

*The Country Gentleman* has paid me better, according to money expended, than any paper I have ever used.—J. H. ANDRE, *Bingham's, N. Y., Feb. 25, 1880.*

My best customers have come through advertising in *The Country Gentleman*. I like it better than agents.—J. A. ROBERTS, *Nurseryman, Malvern, Pa., 3d mo. 3d, 1880.*

4th MONTH.

APRIL, 1881.

30 DAYS.

MOON'S PHASES.		BOSTON.		NEW-YORK.		WASHINGTON		SUN ON MERID.		
		D.	H. M.	H. M.	H. M.	H. M.	D.	H. M.	S.	
FIRST QUARTER,	6	11	10 mo.	10	58 mo.	10	46 mo.	1	12 3 47	
FULL MOON,....	14	7	6 mo.	6	54 mo.	6	42 mo.	9	12 1 28	
THIRD QUARTER	21	4	54 mo.	4	42 mo.	4	30 mo.	17	11 59 25	
NEW MOON,....	28	5	40 mo.	5	28 mo.	5	16 mo.	25	11 57 47	

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR				
		SUN	SUN	MOON	H. W.	SUN	SUN	MOON	H. W.	SUN	SUN	MOON	H. W.	
		RISES	SETS.	RISES	SETS.	RISES	SETS.	RISES	SETS.	RISES	SETS.	RISES	SETS.	
1	F	H	M	H	M	H	M	H	M	H	M	H	M	
2	S	5	42	6	26	9	51	1	34	5	43	6	25	
3	<b>B</b>	5	40	6	27	10	52	2	18	5	41	6	26	
4	M	5	38	6	28	11	46	3	5	5	40	6	27	
5	T	5	37	6	29	morn	3 53	5	38	6	28	morn ev.	39	
6	W	5	35	6	30	0	33	4	44	5	36	6	29	
7	T	5	33	6	32	1	15	5	41	5	35	6	30	
8	F	5	31	6	33	1	50	6	37	5	33	6	31	
9	S	5	30	6	34	2	20	7	30	5	32	6	32	
10	<b>B</b>	5	28	6	35	2	48	8	21	5	30	6	33	
11	M	5	26	6	36	3	14	9	9	5	28	6	34	
12	T	5	25	6	37	3	39	9	57	5	27	6	35	
13	W	5	23	6	38	4	4	10	43	5	25	6	36	
14	T	5	22	6	39	4	30	11	29	5	24	6	37	
15	F	5	20	6	41	rises.	morn	5	22	6	38	rises.	8 57	
16	S	5	18	6	42	8	29	0	11	5	21	6	39	
17	<b>B</b>	5	17	6	43	9	39	0	51	5	19	6	40	
18	M	5	15	6	44	10	42	1	39	5	18	6	41	
19	T	5	14	6	45	11	40	2	31	5	16	6	42	
20	W	5	12	9	46	morn	3 25	5	15	6	44	morn	0 11	
21	T	5	10	6	47	0	29	4	25	5	13	6	43	
22	F	5	9	6	48	1	10	5	28	5	12	6	44	
23	S	5	7	6	49	1	45	6	34	5	10	6	45	
24	<b>B</b>	5	6	6	51	2	17	7	36	5	9	6	46	
25	M	5	4	6	52	2	45	8	32	5	7	6	47	
26	T	5	3	6	53	3	13	9	25	5	6	50	3 16	
27	W	5	1	6	54	3	42	10	18	5	5	6	51	
28	T	5	0	6	55	4	12	11	6	5	3	6	52	
29	F	5	4	59	6	56	sets.	11	52	5	2	6	53	
30	S	5	4	56	6	58	9	35	1	11	5	1	6	54

The first advertisement I ever had was in *The Country Gentleman*, and helped me the most for the money I ever tried.—WALLACE FISK, *Manufacturer of Automatic and Universal Planters, South Byron, N. Y.*, March 9, 1880.

We find *The Country Gentleman* by far the best advertising medium we use.—MOSELEY & STODDARD, *Dairymen's Supply Depot, Poultney, Vt.*

My advertisements with you have always paid well.—CAMPBELL BROWN, *Spring Hill, Tenn.*

I sold all my Sharpless strawberry plants through the advertisement.—JAS. LIPPINCOTT, JR., *Mt. Holly, V. T.*, April 27, 1880.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID.
	D.	H. M.	H. M.	H. M.	D. H. M. S.
FIRST QUARTER,	6	6 0 mo.	5 48 mo.	5 36 mo.	1 II 56 55
FULL MOON, ....	13	5 40 ev.	5 28 ev.	5 16 ev.	9 II 56 15
THIRD QUARTER	20	10 23 mo.	10 11 mo.	9 59 mo.	17 II 56 11
NEW MOON, ....	27	6 52 ev.	6 40 ev.	6 28 ev.	25 II 56 43

CALENDAR		CALENDAR				CALENDAR								
DAY OF MONTH.	DAY OF WEEK.	For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.				
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.		
1 <b>B</b>	M	4 54	7	0 10	25	1 54	4 58	6	56 10 20	10 40	5 2	6 52	10 15	
2	M	4 53	7	1 11	9	2 38	4 57	6	57 11	5 11 24	5 0	6 53	11 0	
3 <b>T</b>		4 52	7	2 11	47	3 24	4 56	6	58 11	43 ev. 10	4 59	6	54 11 39	
4 <b>W</b>		4 51	7	3 morn	4	9	4 54	6	59 morn	0 55	4 58	6	55 morn	
5 <b>T</b>		4 49	7	4 0	20	4 57	4 53	7	0 0 16	1 43	4 57	6	56 0 14	
6 <b>F</b>		4 48	7	5 0	48	5 48	4 52	7	1 0 45	2 34	4 56	6	57 0 43	
7 <b>S</b>		4 47	7	6 1	14	6 42	4 51	7	2 1	13	3 28	4 55	6	58 1 11
8 <b>B</b>		4 46	7	7 1	39	7 34	4 50	7	3 1	39	4 20	4 54	6	59 1 38
9 <b>M</b>		4 44	7	8 2	4	8 24	4 48	7	4 2 2	5 10	4 53	7	0 2 5	
10 <b>T</b>		4 43	7	9 2	29	9 15	4 47	7	5 2 39	6 1	4 52	7	1 2 33	
11 <b>W</b>		4 42	7	10 2	57	10 9	4 46	7	6 2 55	6 55	4 51	7	2 3 4	
12 <b>T</b>		4 41	7	11 3	30	11 4	4 45	7	7 3 34	7 50	4 50	7	3 38	
13 <b>F</b>		4 40	7	13 rises.	11	54	4 44	7	8 rises.	8 40	4 49	7	4 rises.	
14 <b>S</b>		4 39	7	14 8	29	morn	4 43	7	9 8 24	9 27	4 48	7	5 8 18	
15 <b>B</b>		4 38	7	15 9	31	0 41	4 42	7	10 9 26	10 15	4 47	7	6 9 20	
16 <b>M</b>		4 37	7	15 10	24	1 29	4 41	7	11 10 19	11 8	4 46	7	6 10 15	
17 <b>T</b>		4 36	7	17 11	9	2 22	4 41	7	12 11 4	morn	4 45	7	7 11 2	
18 <b>W</b>		4 35	7	18 11	47	3 16	4 40	7	13 11 44	0 2	4 44	7	8 11 42	
19 <b>T</b>		4 34	7	19 morn	4	10	4 39	7	14 morn	0 56	4 44	7	9 morn	
20 <b>F</b>		4 33	7	20 0	20	5 6	4 38	7	15 0 18	1 52	4 43	7	10 0 17	
21 <b>S</b>		4 32	7	21 0	48	6 5	4 37	7	16 0 49	2 51	4 42	7	11 0 48	
22 <b>B</b>		4 32	7	21 1	17	7 6	4 36	7	17 1 18	3 52	4 41	7	12 1 19	
23 <b>M</b>		4 31	7	22 1	45	8 2	4 36	7	17 1 46	4 48	4 41	7	12 1 49	
24 <b>T</b>		4 30	7	23 2	13	8 57	4 35	7	18 2 17	5 43	4 40	7	13 2 20	
25 <b>W</b>		4 29	7	24 2	45	9 50	4 34	7	19 2 49	6 36	4 40	7	14 2 56	
26 <b>T</b>		4 29	7	25 3	21	10 42	4 34	7	20 3 26	7 28	4 39	7	15 3 31	
27 <b>F</b>		4 28	7	26 sets.	11	30	4 33	7	21 sets.	8 16	4 38	7	16 sets.	
28 <b>S</b>		4 27	7	27 8	18	ev. 13	4 33	7	22 8 13	8 59	4 38	7	16 8 18	
29 <b>B</b>		4 27	7	28 9	5	0 50	4 32	7	22 9 0	9 36	4 37	7	17 9 5	
30 <b>M</b>		4 26	7	29 9	45	1 30	4 32	7	23 9 41	10 16	4 37	7	18 9 45	
31 <b>T</b>		4 26	7	29 10	19	2 11	4 31	7	24 10 16	10 57	4 36	7	19 10 19	

My annual advertising of sweet potato plants and sweet potato seed with you is always satisfactory.—W. W. RATHBONE, *Marietta, O.*, April 29, 1880.

We find *The Country Gentleman* by far the most valuable for us of the papers we advertise in—nearly 200.—THOMAS SMOOTHING HARROW CO., *General, N. Y.*, April 27, 1880.

Received your paper at 9:30 A. M., and a telegram at 10:30, stating that the sender would take my Jersey calves at price named.—WM. H. BURNHAM, *Groton, N. Y.*, April 28, 1880.

My recent advertisement has brought me many orders for potatoes.—D. C. STERRETT, *Carlisle, Pa.*, May 11, 1880.

6th MONTH.

JUNE, 1881.

30 DAYS.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGT'N	SUN ON MERID.		
		D. H. M.	D. H. M.	D. H. M.	D.	H. M. S.	
FIRST QUARTER,	4	10 35 ev.	10 23 ev.	10 11 ev.	1	11 57 38	
FULL MOON,....	12	2 13 mo.	2 1 mo.	1 49 mo.	9	11 59 2	
THIRD QUARTER	18	4 35 ev.	4 23 ev.	4 11 ev.	17	12 0 41	
NEW MOON,....	26	9 19 mo.	9 7 mo.	8 55 mo.	25	12 2 25	

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR				
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.		
1	W	H	M	H	M	H	M	H	M	H	M	H	M	
2	T	4	25	7	30	10	50	2	41	4	31	7	25	
3	F	4	24	7	32	11	41	4	14	4	30	7	26	
4	S	4	23	7	33	morn	5	0	4	30	7	27	morn	
5	<b>B</b>	4	23	7	34	0	5	5	50	4	29	7	28	
6	M	4	23	7	34	0	30	6	47	4	29	7	28	
7	T	4	23	7	35	0	56	7	43	4	29	7	29	
8	W	4	23	7	35	1	25	8	41	4	29	7	29	
9	T	4	23	7	36	2	0	9	41	4	28	7	30	
10	F	4	22	7	36	2	42	10	43	4	28	7	30	
11	S	4	22	7	37	3	33	11	41	4	28	7	31	
12	<b>B</b>	4	22	7	37	rises.	morn	4	28	7	31	rises.	9	18
13	M	4	22	7	38	9	3	0	32	4	28	7	32	
14	T	4	22	7	38	9	45	1	19	4	28	7	32	
15	W	4	22	7	38	10	20	2	10	4	28	7	33	
16	T	4	22	7	39	10	52	2	58	4	28	7	33	
17	F	4	22	7	39	11	21	3	47	4	28	7	33	
18	S	4	23	7	39	11	49	4	38	4	28	7	34	
19	<b>B</b>	4	23	7	40	morn	5	34	4	28	7	34	morn	
20	M	4	23	7	40	0	17	6	34	4	28	7	34	
21	T	4	23	7	40	0	48	7	32	4	29	7	34	
22	W	4	23	7	40	1	22	8	29	4	29	7	35	
23	T	4	24	7	41	1	59	9	26	4	29	7	35	
24	F	4	24	7	41	2	44	10	20	4	30	7	35	
25	S	4	24	7	41	3	32	11	9	4	30	7	35	
26	<b>B</b>	4	25	7	42	sets.	11	53	4	30	7	35	sets.	
27	M	4	25	7	42	8	20	ev.	30	4	31	7	35	
28	T	4	25	7	42	8	52	1	4	4	31	7	35	
29	W	4	26	7	42	9	19	1	42	4	32	7	35	
30	T	4	26	7	42	9	45	2	18	4	32	7	35	

I find *The Country Gentleman* the best advertising medium that so far has come to my knowledge.—COLIN CAMERON, *Brickerville, Pa.*, May 8, 1880.

I was well pleased with the result of my advertisement in your paper, as I sold my full stock of plants.—WM. J. ROBINSON, *Howlett Hill, N. Y.*, May 14, 1880.

The value of your paper as an advertising medium is shown by the number of orders we have already received from all parts of the country for our lambs.—FERDINAND C. LATROBE, *Mayor, and President of Park Commission, Baltimore, Md.*, May 20, 1880.

*The Country Gentleman* is the paper to advertise in to succeed in selling stock.—L. MCKINNEY, *Maple Shade Farm, Pine Bush, Orange Co., N. Y.*, May 20, 1880.

7th MONTH.

JULY, 1881.

31 DAYS.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID.		
	D.	H. M.	H. M.	H. M.	D.	H. M.	S.
FIRST QUARTER,	4	○ 32 ev.	○ 20 ev.	○ 8 ev.	1	12	3 38
FULL MOON,....	11	9 29 mo.	9 17 mo.	9 05 mo.	9	12	4 59
THIRD QUARTER	18	○ 50 mo.	○ 38 mo.	○ 26 mo.	17	12	5 54
NEW MOON,....	26	○ 35 mo.	○ 23 mo.	○ 11 mo.	25	12	6 15

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR			
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.		For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.		For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.							
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.	
1	F	4 27	7 41	10 9	2 58	4 32	7 35	10 9	11 42	4 38	7 29	10 9	
2	S	4 27	7 40	10 33	3 55	4 33	7 35	10 34	ev. 21	4 38	7 29	10 35	
3	B	4 28	7 40	10 58	4 18	4 34	7 35	11 0	1 4	4 39	7 28	11 2	
4	M	4 28	7 40	11 25	5 7	4 34	7 34	11 28	1 53	4 40	7 28	11 31	
5	T	4 29	7 40	11 56	6 4	4 35	7 34	11 59	2 50	4 40	7 28	morn	
6	W	4 30	7 39	morn	7 10	4 35	7 34	morn	3 54	4 41	7 28	0 4	
7	T	4 30	7 39	○ 33	8 14	4 36	7 33	○ 38	5 0	4 42	7 28	○ 43	
8	F	4 31	7 39	1 18	9 21	4 37	7 33	1 24	6 7	4 42	7 28	1 30	
9	S	4 32	7 38	2 13	10 28	4 37	7 33	2 20	7 14	4 43	7 27	2 26	
10	B	4 33	7 38	3 19	11 29	4 38	7 32	3 25	8 15	4 43	7 27	3 32	
11	M	4 33	7 37	rises.	morn	4 39	7 32	rises.	9 6	4 44	7 26	rises.	
12	T	4 34	7 37	8 16	○ 20	4 39	7 31	8 14	9 49	4 45	7 26	8 12	
13	W	4 35	7 36	8 50	1 3	4 40	7 31	8 49	10 35	4 46	7 26	8 48	
14	T	4 36	7 36	9 22	1 49	4 41	7 30	9 22	11 21	4 46	7 25	9 22	
15	F	4 37	7 35	9 51	2 35	4 42	7 30	9 52	morn	4 47	7 25	9 53	
16	S	4 37	7 34	10 20	3 21	4 42	7 29	10 22	○ 7	4 48	7 24	10 25	
17	B	4 38	7 34	10 50	4 9	4 43	7 28	10 54	○ 55	4 48	7 23	10 58	
18	M	4 39	7 33	11 24	5 2	4 44	7 28	11 28	1 48	4 49	7 23	11 33	
19	T	4 40	7 32	morn	6 3	4 45	7 27	morn	2 49	4 50	7 22	morn	
20	W	4 41	7 31	○ 1	7 5	4 46	7 26	○ 6	3 51	4 51	7 21	○ 12	
21	T	4 42	7 31	○ 42	8 4	4 47	7 26	○ 48	4 50	4 52	7 21	○ 54	
22	F	4 43	7 30	1 29	9 1	4 48	7 25	1 35	5 47	4 53	7 20	1 42	
23	S	4 44	7 29	2 21	9 56	4 48	7 24	2 27	6 42	4 53	7 19	2 33	
24	B	4 45	7 28	3 17	10 45	4 49	7 23	3 23	7 31	4 54	7 18	3 23	
25	M	4 46	7 27	4 15	11 29	4 50	7 22	4 20	8 15	4 55	7 18	4 25	
26	T	4 47	7 26	sets.	ev. 6	4 51	7 21	sets.	8 52	4 56	7 17	sets.	
27	W	4 48	7 25	7 50	○ 38	4 52	7 20	7 48	9 24	4 57	7 16	7 47	
28	T	4 49	7 24	8 14	1 10	4 53	7 19	8 14	9 56	4 58	7 15	8 13	
29	F	4 50	7 23	8 38	1 46	4 54	7 19	8 39	10 32	4 59	7 14	8 39	
30	S	4 51	7 22	9 2	2 22	4 55	7 18	9 411	8 4	4 59	7 13	9 6	
31	B	4 52	7 21	9 29	3 1	4 56	7 16	9 31	11 47	5	47	12 9 34	

The advertisement brought me customers for all my two-year old Devon Bulls.—H. N. WEED, *Sound View Farm, Stamford, Ct., May 22, 1880.*

I find your paper the best medium of advertising I have struck. Had replies from Pennsylvania, New-Jersey, New-York City, Rochester, Geneva, Canada, Ohio, &c.—*[Advertiser of Farm for Sale.]*

The insertion in your widely-circulated standard Journal has brought Mr. Brown many inquiries from desirable land hunters.—S. W. ELY, *Ag. Editor Cincinnati Gazette, Cincinnati, O., Aug. 31, 1880.*

8th MONTH.

AUGUST, 1881.

31 DAYS.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGT'N	SUN ON MERID.		
	D.	H. M.	H. M.	H. M.	D.	H. M. S.	
FIRST QUARTER,	2	II 58 ev.	II 46 ev.	II 34 ev.	1	12 6 4	
FULL MOON,....	9	4 23 ev.	4 11 ev.	3 59 ev.	9	12 5 13	
THIRD QUARTER	16	0 14 ev.	0 2 ev.	II 50 mo.	17	12 3 46	
NEW MOON, ...	24	4 1 ev.	3 49 ev.	3 37 ev.	25	12 1 48	

		CALENDAR				CALENDAR				CALENDAR			
DAY OF MONTH.	DAY OF WEEK.	For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryland, Virginia, Kent'ky, Miss'ri, and California.			
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.	
1	M	H 4	53 7	20	9 57	3 44	4 57 7	15 10	2 ev. 30	5 1	7 11	10 5	
2	T	T 4	54 7	18	10 31	4 34	4 58 7	14 10	36 1 20	5 2	7 10	10 40	
3	W	W 4	55 7	17	II 11	5 35	4 59 7	13 11	18 2 21	5 3	7 9	11 22	
4	T	T 4	56 7	16	II 59	6 46	5 0 7	12 morn	3 32	5 4	7 8	morn	
5	F	F 4	57 7	15	morn	7 57	5 1 7	11 0	7 4 43	5 5	7 7	0 12	
6	S	S 4	58 7	13	0 58	9 5	5 2 7	10 1	6 5 51	5 5	7 6	1 11	
7	<b>B</b>	<b>B</b> 4	59 7	12	2 7	10 13	5 3 7	8 2 14	6 59	5 5	6 7	2 18	
8	M	M 5	0 7	11	3 22	II 11	5 4 7	7 3 28	7 57	5 5	7 7	3 32	
9	T	T 5	1 7	10	rises.	morn	5 5 7	6 rises.	8 47	5 5	8 7	2 rises.	
10	W	W 5	2 7	8	7 19	0 1	5 6 7	5 7 19	9 28	5 5	9 7	1 18	
11	T	T 5	3 7	7	7 50	0 42	5 7 7	3 7 51	10 10	5 5	10 7	0 51	
12	F	F 5	4 7	5	8 20	1 24	5 7 7	2 8 23	10 55	5 5	11 6	59 8 24	
13	S	S 5	5 7	4	8 51	2 9	5 8 7	1 8 55	11 40	5 5	12 6	57 8 57	
14	<b>B</b>	<b>B</b> 5	6 7	3	9 24	2 54	5 9 6	59 9 29	morn	5 5	13 6	56 9 32	
15	M	M 5	7 7	1	10 0	3 42	5 10 6	58 10 7	0 28	5 5	14 6	55 10 11	
16	T	T 5	8 7	0	10 41	4 34	5 11 6	57 10 49	1 20	5 5	15 6	53 10 53	
17	W	W 5	9 6	58	II 27	5 33	5 12 6	55 11 34	2 19	5 5	16 6	52 11 39	
18	T	T 5	10 6	57	morn	6 37	5 13 6	54 morn	3 23	5 5	16 6	51 morn	
19	F	F 5	12 6	55	0 18	7 37	5 14 6	52 0 25	4 23	5 5	17 6	49 0 30	
20	S	S 5	13 6	54	1 12	8 33	5 15 6	51 1 18	5 19	5 5	18 6	48 1 23	
21	<b>B</b>	<b>B</b> 5	14 6	52	2 9	9 25	5 16 6	49 2 15	6 11	5 5	19 6	47 2 19	
22	M	M 5	15 6	50	3 8	10 14	5 17 6	48 3 13	7 0	5 5	20 6	45 3 16	
23	T	T 5	16 6	49	4 4	10 57	5 18 6	46 4 11	7 43	5 5	21 6	44 4 14	
24	W	W 5	17 6	47	sets.	II 36	5 19 6	45 sets.	8 22	5 5	22 6	42 sets.	
25	T	T 5	18 6	46	6 44	ev. 10	5 20 6	43 6 44	8 56	5 5	23 6	41 6 44	
26	F	F 5	19 6	44	7 8	0 42	5 21 6	42 7 9	9 28	5 5	24 6	39 7 10	
27	S	S 5	20 6	42	7 34	1 15	5 22 6	40 7 36	10 1	5 5	25 6	38 7 38	
28	<b>B</b>	<b>B</b> 5	21 6	41	8 1	1 53	5 23 6	39 8 5	10 39	5 5	26 6	36 8 8	
29	M	M 5	22 6	39	8 33	2 35	5 24 6	37 8 37	11 21	5 5	26 6	35 8 42	
30	T	T 5	23 6	37	9 10	3 21	5 25 6	35 9 15 ev.	7	5 5	27 6	34 9 21	
31	W	W 5	24 6	36	9 55	4 14	5 26 6	34 10 0	1 0	5 5	28 6	32 10 7	

Your paper, as usual, has proved the most profitable of any we advertise in.—G. H. & J. H. HALE, South Glastonbury, Ct., Aug. 25, 1880.

I am pleased to say that I have several inquiries about Farms from my advertisement in your paper.—G., Baltimore, Md., Sept. 6, 1880.

Our Jersey bull 9th Duke is sold—the first appearance of the advertisement did the business for him.—C. G. SHERMAN, Cranmoor Farm, Tom's River, N. J., Sept. 8, 1880.

My advertisement last year, brought me more satisfactory return than any other medium outside of this city.—FRANK S. PLATT, Seedsman & Florist, New-Haven, Ct., Sept. 13, '80.

9th MONTH.

SEPTEMBER, 1881.

30 DAYS.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID.
		D. H. M.	H. M.	H. M.	D. H. M. S.
FIRST QUARTER,	1	9 18 mo.	9 6 mo.	8 54 mo,	1 11 59 44
FULL MOON,.....	7	11 55 ev.	11 43 ev.	11 31 ev.	9 11 57 4
THIRD QUARTER	15	3 17 mo.	3 5 mo.	2 53 mo.	17 11 54 16
NEW MOON,.....	23	7 10 mo.	6 58 mo.	6 46 mo.	25 11 51 29
FIRST QUARTER,	30	5 4 ev.	4 52 ev.	4 40 ev.	30 11 49 50

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR			
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.	
1	T	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M
2	F	5 25	6 34	10 48	5 17	5 27	6 32	10 54	2 3	5 29	6 30	11 0	
3	S	5 26	6 32	11 50	6 28	5 28	6 31	11 56	3 14	5 30	6 29	morn	
4	B	5 28	6 31	morn	7 42	5 29	6 29	morn	4 28	5 31	6 27	0 2	
5	M	5 29	6 29	0 59	8 48	5 30	6 27	1 6	5 34	5 32	6 25	1 10	
6	T	5 30	6 27	2 10	9 51	5 31	6 26	2 14	6 37	5 33	6 24	2 23	
7	W	5 31	6 26	3 31	10 48	5 32	6 24	3 34	7 34	5 34	6 22	3 37	
8	T	5 32	6 24	rises.	11 38	5 33	6 22	rises.	8 24	5 35	6 21	rises.	
9	F	5 33	6 22	6 17	morn	5 34	6 21	6 18	9 6	5 35	6 20	6 19	
10	S	5 34	6 20	6 48	0 20	5 35	6 19	6 51	9 46	5 36	6 18	6 53	
11	B	5 35	6 19	7 21	1 0	5 36	6 17	7 25	10 30	5 37	6 16	7 28	
12	M	5 36	6 17	7 57	1 44	5 37	6 16	8 2	11 15	5 38	6 15	8 9	
13	T	5 37	6 15	8 37	2 29	5 38	6 14	8 43	morn	5 39	6 13	8 48	
14	W	5 38	6 13	9 23	3 17	5 39	6 12	9 29	0 3	5 40	6 12	9 35	
15	T	5 39	6 11	10 12	4 8	5 40	6 11	10 18	0 54	5 41	6 10	10 24	
16	F	5 40	6 10	11 5	5 3	5 41	6 9	11 11	1 49	5 42	6 8	11 17	
17	S	5 41	6 8	morn	6 4	5 42	6 7	morn	2 50	5 43	6 7	morn	
18	B	5 42	6 6	0 2	7 4	5 43	6 6	0 6	3 50	5 44	6 5	0 13	
19	M	5 43	6 4	1 0	7 57	5 44	6 4	1 5	4 43	5 44	6 4	1 9	
20	T	5 45	6 3	1 59	8 46	5 45	6 2	2 3	5 32	5 45	6 2	2 6	
21	W	5 46	6 1	2 58	9 34	5 46	6 1	3 1	0 20	5 46	6 0	3 4	
22	T	5 47	5 59	3 58	10 19	5 47	5 59	4 0	7 5	5 47	5 59	4 1	
23	F	5 48	5 57	4 58	11 2	5 48	5 57	4 59	7 48	5 48	5 57	4 59	
24	S	5 49	5 56	sets.	11 41	5 49	5 56	sets.	8 27	5 49	5 56	sets.	
25	B	5 50	5 54	6 6	ev. 17	5 50	5 54	6 9	9 3	5 50	5 54	6 12	
26	M	5 51	5 52	6 37	0 51	5 51	5 52	6 40	9 37	5 51	5 52	6 44	
27	T	5 52	5 50	7 12	1 32	5 52	5 51	7 17	10 18	5 52	5 51	7 22	
28	W	5 53	5 49	7 54	2 18	5 53	5 49	8 0	11 4	5 53	5 49	8 6	
29	T	5 54	5 47	8 44	3 8	5 54	5 47	8 50	11 54	5 54	5 48	8 56	
30	F	5 55	5 45	9 42	4 3	5 55	5 45	9 48	ev. 49	5 54	5 46	9 54	
		5 56	5 43	10 48	5 6	5 56	5 44	10 53	1 52	5 55	5 45	10 59	

I have sold eighteen head of Jerseys, all through the little advertisement that appeared in *The Country Gentleman* some weeks since.—W. L. RUTHERFORD, Bovina, May 14, 1880. [The advertisement referred to was three lines long, and appeared twice on the outside, at a cost of \$3. EDS.]

We have received many orders through your paper, and were completely sold out of Gregg raspberry. Near the close of the season, so great was the demand, that we were compelled in a few instances to return the money sent us.—CHAS. A. GREEN, Nurseryman, Clifton, N. Y., May 18, 1880.

10th MONTH.

OCTOBER, 1881.

31 DAYS.

MOON'S PHASES.		BOSTON.		NEW-YORK.		WASHINGTON		SUN ON MERID.	
	D.	H. M.	H. M.	H. M.	H. M.	D.	H. M. S.		
FULL MOON,....	7	9 15 mo.	9 3 mo.	8 51 mo.		1	11 49 31		
THIRD QUARTER	14	9 42 ev.	9 30 ev.	9 18 ev.		9	11 47 10		
NEW MOON,...	22	9 47 ev.	9 35 ev.	9 23 ev.		17	11 45 19		
FIRST QUARTER,	29	0 3 mo.	11 51 ev.	11 39 ev.		25	11 44 7		

		CALENDAR				CALENDAR				CALENDAR			
DAY OF MONTH.	DAY OF WEEK.	For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.			
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.	
1	S	5 58	5 42	II 58	6 15	5 57	5 42	morn	3 1	5 56	5 43	morn	
2	<b>B</b>	5 59	5 40	morn	7 23	5 58	5 41	0 2	4 9	5 57	5 41	0 7	
3	M	6 0	5 38	I 11	8 25	5 59	5 39	I 15	5 11	5 58	5 40	I 18	
4	T	6 1	5 36	2 25	9 24	6 0	5 37	2 28	6 10	5 59	5 38	2 30	
5	W	6 2	5 35	3 40	10 20	6 1	5 36	3 41	7 6	6 0	5 37	3 42	
6	T	6 3	5 33	4 54	II 11	6 2	5 34	4 54	7 57	6 1	5 35	4 54	
7	F	6 4	5 31	rises.	II 57	6 3	5 32	rises.	8 43	6 2	5 33	rises.	
8	S	6 5	5 30	5 52	morn	6 4	5 31	5 56	9 25	6 3	5 32	6 0	
9	<b>B</b>	6 6	5 28	6 31	0 39	6 5	5 29	6 36	10 5	6 4	5 30	6 41	
10	M	6 7	5 26	7 14	I 19	6 6	5 28	7 20	10 52	6 5	5 29	7 27	
11	T	6 9	5 25	8 3	2 6	6 7	5 26	8 9	11 39	6 6	5 27	8 15	
12	W	6 10	5 23	8 56	2 53	6 8	5 24	9 2	morn	6 7	5 26	9 8	
13	T	6 11	5 22	9 52	3 41	6 10	5 23	9 58	0 27	6 8	5 24	10 3	
14	F	6 12	5 20	10 51	4 31	6 11	5 21	10 55	I 17	6 9	5 23	II 0	
15	S	6 13	5 18	II 49	5 25	7 12	5 20	II 53	2 11	6 10	5 22	II 57	
16	<b>B</b>	6 14	5 17	morn	6 20	6 13	5 18	morn	3 6	6 11	5 20	morn	
17	M	6 16	5 15	0 48	7 14	6 14	5 17	0 51	4 0	6 12	5 19	0 54	
18	T	6 17	5 13	I 47	8 2	6 15	5 15	I 49	4 48	6 13	5 17	I 51	
19	W	6 18	5 12	2 47	8 50	6 16	5 14	2 48	5 36	6 14	5 16	2 49	
20	T	6 19	5 10	3 48	9 37	6 17	5 12	3 48	6 23	6 15	5 15	3 47	
21	F	6 21	5 9	4 50	10 24	6 18	5 11	4 49	7 10	6 16	5 13	4 48	
22	S	6 22	5 7	sets.	II 10	6 20	5 10	sets.	7 56	6 17	5 12	sets.	
23	<b>B</b>	6 23	5 6	5 12	II 53	6 21	5 8	5 17	8 39	6 18	5 11	5 22	
24	M	6 24	5 4	5 53	ev. 35	6 22	5 7	5 58	9 21	6 19	5 9	6 4	
25	T	6 25	5 3	6 41	I 17	6 23	5 5	6 47	10 3	6 20	5 8	6 53	
26	W	6 27	5 1	7 37	2 7	6 24	5 4	7 43	10 53	6 21	5 7	7 50	
27	T	6 28	5 0	8 42	2 58	6 25	5 3	8 47	II 44	6 22	5 5	8 52	
28	F	6 29	4 59	9 50	3 53	6 26	5 1	9 54	ev. 39	6 24	5 4	9 59	
29	S	6 30	4 57	II 1	4 51	6 28	5 0	11 5	I 37	6 25	5 3	II 9	
30	<b>B</b>	6 32	4 56	morn	5 55	6 29	4 59	morn	2 41	6 26	5 2	morn	
31	M	6 33	4 55	0 14	6 59	6 30	4 58	0 16	3 45	6 27	5 1	0 18	

I shall advertise this spring in *The Country Gentleman* only, as I am satisfied it is the best advertising medium in the country. My advertisement last fall brought me customers for every Poland China pig I had for sale. My customers made a clean sweep.—  
B. F. TRACY, *Proprietor Marshland Herd, Owego, N. Y.*

Your paper cannot be surpassed for agricultural announcements; it is all any one can ask.—F. W. ISHAM, *Hilltop Egg and Dairy Farm, Norwich, Ct., Oct. 26, 1880.*

From the advertisement in *The Country Gentleman* have had a great many inquiries, the result of which was a number of cash sales—C. R. KEEFER, *Cearfoss, Md.*

11th MONTH.

## NOVEMBER, 1881.

30 DAYS.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGT'N	SUN ON MERID.	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
FULL MOON, ....	5	9 19 ev.	9 7 ev.	8 55 ev.	1	11 43 42
THIRD QUARTER	13	6 17 ev.	6 5 ev.	5 53 ev.	9	11 44 1
NEW MOON, ....	21	11 37 mo.	11 25 mo.	11 13 mo.	17	11 45 14
FIRST QUARTER,	28	7 17 mo.	7 5 mo.	6 53 mo.	25	11 47 20

DAY OF MONTH.	DAY OF WEEK.	CALENDAR					CALENDAR					CALENDAR						
		SUN	SUN	MOON	H. W.	BOST'N	SUN	SUN	MOON	H. W.	N. Y.	SUN	SUN	MOON	H. W.	N. Y.		
		H	M	H	M	H	M	H	M	H	M	H	M	H	M			
1	T	6	34	4	53	1	24	7	59	6	31	4	56	1	26	4	45	
2	W	6	35	4	52	2	37	8	55	6	32	4	55	2	37	5	41	
3	T	6	37	4	51	3	48	9	50	6	33	4	54	3	47	6	36	
4	F	6	38	4	50	4	59	10	45	6	35	4	53	4	57	7	31	
5	S	6	39	4	49	rises.	11	34		6	36	4	52	rises.	8	20		
6	B	6	40	4	47	5	5	morn		6	37	4	51	5	11	9	5	
7	M	6	42	4	46	5	52	0	19	6	38	4	50	5	58	9	45	
8	T	6	43	4	45	6	44	0	59	6	39	4	49	6	50	10	29	
9	W	6	44	4	44	7	40	1	43	6	41	4	48	7	45	11	13	
10	T	6	45	4	43	8	38	2	27	6	42	4	47	8	43	11	57	
11	F	6	47	4	42	9	37	3	11	6	43	4	46	9	41	morn		
12	S	6	48	4	41	10	36	3	55	6	44	4	45	10	40	0	41	
13	B	6	49	4	40	11	36	4	41	6	45	4	44	11	38	1	27	
14	M	6	50	4	39	morn	5	29		6	46	4	43	morn	2	15		
15	T	6	52	4	38	0	34	6	21	6	48	4	42	0	35	3	7	
16	W	6	53	4	37	1	32	7	14	6	49	4	41	1	33	4	0	
17	T	6	54	4	36	2	34	8	3	6	50	4	41	2	34	4	49	
18	F	6	55	4	35	3	38	8	55	6	51	4	40	3	36	5	41	
19	S	6	57	4	35	4	42	9	48	6	52	4	39	4	40	6	34	
20	B	6	58	4	34	5	49	10	42	6	53	4	39	5	44	7	28	
21	M	6	59	4	33	sets.	11	35		6	55	4	38	sets.	8	21	6	50
22	T	7	0	4	33	5	27	ev.	22	6	56	4	37	5	34	9	8	
23	W	7	1	4	32	6	30	1	7	6	57	4	37	6	36	9	53	
24	T	7	3	4	32	7	39	1	57	6	58	4	36	7	45	10	43	
25	F	7	4	4	31	8	53	2	48	6	59	4	36	8	55	11	34	
26	S	7	5	4	31	10	4	3	38	7	0	4	35	10	7	ev.	24	
27	B	7	6	4	30	11	16	4	32	7	1	4	35	11	18	1	18	
28	M	7	7	4	30	morn	5	30	7	2	4	34	morn	2	16	6	57	
29	T	7	8	4	29	0	28	6	30	7	3	4	34	0	28	3	16	
30	W	7	9	4	29	1	37	7	31	7	4	4	34	1	37	4	17	

Hardly expecting to make a sale of such a thing as a steam pump through an advertisement in *The Country Gentleman*, I was agreeably disappointed to receive many inquiries, and finally make a sale, through it, to a party in North Carolina. I must say it is more than I looked for, and shows that *The Country Gentleman* is an excellent medium through which to make one's wants known, whatever they may be, in fact.—HENRY STEWART, Hackensack, N. J., Oct. 25, 1880.

My last advertisement of Poland-Chinas in *The Country Gentleman*, led to sales of twenty-one pigs, including two pairs to the State of New-York, and one boar to Delaware.—W.M. WADE, Bristol, O., Sept. 28, 1880.

12th MONTH.

DECEMBER, 1881.

31 DAYS.

MOON'S PHASES.		BOSTON.		NEW-YORK.		WASHINGTON		SUN ON MERID.	
		D.	H. M.	H. M.	H. M.	H. M.	H. M. S.	D.	H. M. S.
FULL MOON, ....		5	o 30 ev.	o 18 ev.	o 6 ev.			1	11 49 26
THIRD QUARTER	13		3 21 ev.	3 9 ev.	2 57 ev.			9	11 52 47
NEW MOON, ...	21		o 23 mo.	o 11 mo.	II 59 ev.			17	11 56 36
FIRST QUARTER,	27		3 58 ev.	3 46 ev.	3 34 ev.			25	12 o 36

		CALENDAR				CALENDAR				CALENDAR			
DAY OF MONTH.	DAY OF WEEK.	For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'r, and California.			
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.	
1	T	H 7	M 10	H 4	M 29	H 2	M 47	H 8	M 28	H 7	M 6	H 4	M 34
2	F	H 7	M 12	H 4	M 28	H 3	M 55	H 9	M 25	H 7	M 7	H 4	M 33
3	S	H 7	M 13	H 4	M 28	H 5	M 2	H 10	M 22	H 7	M 7	H 2	M 38
4	<b>B</b>	H 7	M 14	H 4	M 28	H 6	M 6	H 11	M 14	H 7	M 8	H 4	M 33
5	M	H 7	M 14	H 4	M 28	rises.	morn			H 7	M 9	H 4	M 33
6	T	H 7	M 15	H 4	M 28	H 5	M 28	H 0	M 1	H 7	M 10	H 4	M 33
7	W	H 7	M 16	H 4	M 28	H 6	M 25	H 0	M 39	H 7	M 11	H 4	M 33
8	T	H 7	M 17	H 4	M 28	H 7	M 24	H 1	M 18	H 7	M 12	H 4	M 33
9	F	H 7	M 18	H 4	M 28	H 8	M 23	H 1	M 59	H 7	M 13	H 4	M 33
10	S	H 7	M 18	H 4	M 28	H 9	M 23	H 2	M 38	H 7	M 13	H 4	M 38
11	<b>B</b>	H 7	M 19	H 4	M 28	H 10	M 22	H 3	M 17	H 7	M 14	H 4	M 34
12	M	H 7	M 20	H 4	M 29	H 11	M 21	H 3	M 58	H 7	M 14	H 4	M 34
13	T	H 7	M 21	H 4	M 29	morn		H 4	M 41	H 7	M 15	H 4	M 34
14	W	H 7	M 22	H 4	M 29	H 0	M 20	H 5	M 29	H 7	M 16	H 4	M 34
15	T	H 7	M 23	H 4	M 29	H 1	M 20	H 6	M 23	H 7	M 17	H 4	M 34
16	F	H 7	M 23	H 4	M 29	H 2	M 23	H 7	M 20	H 7	M 18	H 4	M 34
17	S	H 7	M 24	H 4	M 29	H 3	M 28	H 8	M 17	H 7	M 19	H 4	M 34
18	<b>B</b>	H 7	M 25	H 4	M 29	H 4	M 34	H 9	M 17	H 7	M 19	H 4	M 35
19	M	H 7	M 25	H 4	M 30	H 5	M 41	H 10	M 19	H 7	M 20	H 4	M 35
20	T	H 7	M 26	H 4	M 30	sets.	II 18			H 7	M 21	H 4	M 36
21	W	H 7	M 27	H 4	M 31	H 5	M 20	ev.	H 9	H 7	M 21	H 4	M 36
22	T	H 7	M 27	H 4	M 31	H 6	M 33	H 0	M 54	H 7	M 22	H 4	M 37
23	F	H 7	M 27	H 4	M 32	H 7	M 48	H 1	M 43	H 7	M 22	H 4	M 37
24	S	H 7	M 28	H 4	M 32	H 9	M 4	H 2	M 30	H 7	M 22	H 4	M 38
25	<b>B</b>	H 7	M 28	H 4	M 33	H 10	M 17	H 3	M 18	H 7	M 23	H 4	M 39
26	M	H 7	M 29	H 4	M 34	H 11	M 29	H 4	M 8	H 7	M 23	H 4	M 39
27	T	H 7	M 29	H 4	M 34	morn		H 5	M 3	H 7	M 24	H 4	M 40
28	W	H 7	M 29	H 4	M 35	H 0	M 38	H 6	M 1	H 7	M 24	H 4	M 41
29	T	H 7	M 29	H 4	M 36	H 1	M 47	H 7	M 5	H 7	M 24	H 4	M 41
30	F	H 7	M 30	H 4	M 37	H 2	M 53	H 8	M 4	H 7	M 24	H 4	M 42
31	S	H 7	M 30	H 4	M 38	H 3	M 58	H 9	M 2	H 7	M 24	H 4	M 43

My advertisement in your paper brought me a great many inquiries, and I have made some good sales.—EDW. HICKS, *Goshenville, Pa.*, Sept. 27, 1880. [Cotswolds, &c.]

It gives me pleasure to say that my last advertisement brought me a host of inquiries for Jersey Cattle and Yorkshires, and a number of buyers, and that I have found your paper to be the best advertising medium I have yet tried—which, I think, is the experience of all who have tried it.—J. W. WHITENACK, *Bound Brook, N. J.*, Dec. 29, 1879.

I am glad to say that I have *always been successful* when I have advertised in your columns. H. W. DEWEY, *Sidney Centre, N. Y.*, Nov. 8, 1880.

THE  
ILLUSTRATED ANNUAL REGISTER  
OF  
RURAL AFFAIRS.

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SURROUNDINGS OF SCHOOL-HOUSES.

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THE MOST DURABLE impressions on the mind are those made in early life. Such impressions should be of an instructive and pleasing character. They should bring out and strengthen a taste for order, neatness and excellence. Special attention should therefore be given to make the country school-room and its surroundings—a place where half the waking hours of childhood are spent—in every way tending to stamp the right kind of character on the young mind.

There is nothing in all the departments of rural improvement where a greater deficiency exists. In many parts of the country the common school-houses are greatly neglected. In riding through so prosperous a region of country as one of the best counties in Western New-York, a cheap district school-house was seen unpainted and in a dilapidated condition, its original cost not amounting to \$500, and unshaded by a single tree. It was partly crowded into the public road, as not a quarter of an

acre could be spared for a school lot from the contiguous two hundred acre farm. Within view, and not more than a mile distant, were two magnificent brick barns, belonging to the two neighboring farmers, and neither



Fig. 244.

of these buildings could have cost less than \$6,000, (fig. 244.) This contrast between the small, poor and bleak school-house and the elegant and spacious barns, indicated the relative estimate which the intelligent land-owners of this region placed on their horses and their children.

Children should not be driven from school by the repulsive appearance of the surroundings. Their early days and early impressions should be connected with the cultivation of landscape taste, which would not only tend to draw them away from the demoralizing influences of street lounging and drinking saloons, but they would brighten the mind, stimulate the intellect, encourage study, and fit the future men and women all the better for the active duties of life. They would increase the attractions of rural life and of home influences.

The writer had an opportunity some years ago for trying an experiment in favor of school-house adornment, in a region of country where



Fig. 245.

these buildings were much neglected. He was applied to to sell a three-quarter acre lot for the new school-house. The condition in the sale was insisted on, that the trustees should plant and keep in thrifty con-

dition at least a dozen deciduous shade trees, and as many evergreens, or forfeit annually a specified sum. They paid the penalty the first year, and then concluded that it was cheaper to plant and take care of the trees. That school-house is now the only one in that region of country that enjoys anything like landscape adornment, (fig. 245.)

The character of the planting must vary with the character of the people. If they have little horticultural taste, they must not attempt too much. The school-house lot should, however, contain an acre at least, and the building may be simply flanked with scattered trees and groups. The ground should be seeded to grass, which should be cut with one of the cheap and efficient hand lawn-mowers as often as once a week in summer. This will afford a handsome green carpet for the children to tread on, the play ground occupying the rear, so that the green in front may not be worn brown by their active feet. A gravel walk may extend to the house in front, provided it can be kept neatly trimmed at the borders, and in perfect order (fig. 246); but if this neatness cannot be preserved, it will be better to have no other walk than the smooth path worn by the feet. Such grounds, neatly kept, would afford a pleasing combination

of shade and grass carpet, which would not be lost in its influence on the young mind.

If some horticultural taste exists in the neighborhood, and if a teacher can be secured who will foster this taste in his pupils, the grounds may assume a more ornamental character. A few circular flower beds may be neatly cut in the grass, and planted with such easy growing and continued

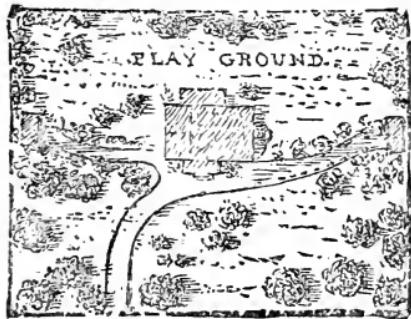


Fig 246.

bloomers as verbenas, double zinnias, Drummond phloxes, petunias and geraniums, (fig. 243, vignette at head). These flower beds will add largely to the charms of the place. The scholars should be enlisted in taking care of them, and in preserving their neatness and finish, and they should feel that their care and skill are appreciated by older persons. This method has been tried with much success on the grounds of a higher seminary, a simple horticultural society, with president, secretary, and other officers, being formed of students and teachers, and brief lectures or lessons given on the principles of vegetable growth, aided by experiments in the germination of seeds, budding, grafting, &c. In another instance, the young teacher of a district school was successful in the cultivation of annuals about the school-house, and a profuse and brilliant display of flowers was seen through the season. The cheerful stimulus thus given to the scholars was felt in their studies, and that school was conspicuous for the progress made by them in all departments.

Academies and other institutions more advanced than common or district schools, may carry these improvements much farther. An arboretum may be planted on a portion of the grounds, consisting of all the principal timber and other trees, with which young persons should be well acquainted. Another portion may contain living specimens of all useful cultivated plants and their varieties, such as the various species of cultivated grasses, varieties of wheat, specimens of lucerne, cotton, madder, millets, &c., and an in-door collection should occupy a room for all agricultural plants and their products. Handsomely laid out grounds, with landscape effect, would infuse into the students a desire to repeat such pleasing results at their own homes.

A teacher in such an institution should know how to make botany and its applications attractive, illustrated by trees and plants in sight, or portions of living specimens on the table before him, and should be able to explain to his pupils the requisites for germination of seeds and the successful growth of plants, for transplanting, pruning, budding and grafting, and encourage all the experiments practicable. Thus useful as well as interesting information would be imparted to them that would prove of value through their lives.

A recent writer describes the frequent condition and character of country school-houses and grounds in another State, in these words: "Buildings with the panes broken out of the windows, and a panel or two



Fig. 247.

of the front door stove in, the sides cut and marked with rude and coarse representations, the fences broken down, and altogether a general appearance of riotous and destructive character," (fig. 247.) To show that this battered condition depends on the treatment which the scholars receive, and that no appeal is made to their sense of propriety and taste, it is only necessary to mention a single case,

where in a large school the desks and walls were thus cut and defaced in a single winter to an amount of damage estimated at \$400. A new teacher came, new furniture was procured, the buildings were repaired, and for the next five years not a pencil scratch or a knife mark was seen on one of the desks.

**TREES AND SHRUBS.**—Among the larger trees the sugar maple, black and white birches, and the silver maple, form good shade trees, and they may be placed towards the outer portions of the grounds. For more extended places, the chestnut and black walnut may be chosen. Among smaller trees the horsechestnut, the striped maple and the mountain ash are adapted to more limited grounds. For large, dense shrubs select Tartarian honeysuckle, *Philadelphus*, purple fringe and lilac. Large growing evergreen trees may be kept within bounds by cutting back

so as to give an irregular outline, and not by shearing back to a uniformly even and stiff surface.

The views of school-houses which we have already given represent those of small size. In larger districts, more capacious buildings may be



Fig. 248.

built, as shown in fig. 248, with a small belfry. A still larger one, with different apartments and recitation room, is shown in fig. 249, having less of the stiff and formal expression of square Grecian blocks, and more of the cheerful and home-like appearance of cottage outline.

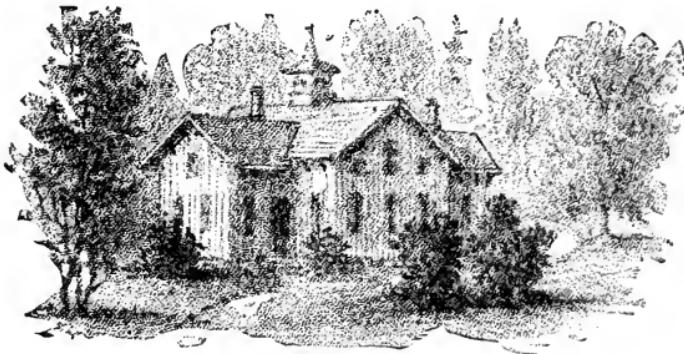


Fig. 249.

The plan shown in fig. 246 has a handsome lawn in front, planted with the smaller ornamental trees, and with some of the larger shrubs. The play ground is in the rear, and is planted with fewer trees. It is important that both be kept smoothly shaven with a lawn mower. The labor will be small, and could be performed by some of the larger and more careful scholars. The narrow paths to the closets on each side are sheltered with small evergreen trees, both for seclusion and for protection from snow drifts in winter. The condition of such closets is a pretty certain indication of the degree of civilization of the owners and occupants. If untidy and repulsive, the people of the district may safely be set down as in a partly savage state. If neat and clean, and all bad odor and foul drainage are prevented by a daily use of coal

ashes, road dust or other suitable absorbent, we may be sure that we have reached a fully civilized community.

Another plan of school grounds is shown in fig. 250, where the house is set near one side, so as to give more room on the other part for lawn and

play ground. The closet is divided, and entered on opposite sides. It may be remarked that when a daily absorbent of a few pints of road dust or coal ashes is used, there will be no more difficulty in drawing or wheeling off the contents each month or two, than in shovelling and wheeling the same quantity of sand, and there can be no danger of bad air or polluted water, to



Fig. 250.

the detriment of the health of the students. See *RURAL AFFAIRS*, vol. VII, p. 73, for details.

When the grounds are necessarily limited, the school-house may be placed at one side, as in fig. 251, or in the middle, as in fig. 252. The former may be planted with shrubs and small trees; the latter with two or three larger trees for a shade.

The appearance and condition of country or district school-houses have much improved in many parts of the country, but with scarcely an exception, little is done to ornament the grounds, although the cost is a mere nothing

compared with the expense of the buildings. In a rich county in Central New-York, a good looking, white painted school-house is placed at the corner where two public roads meet, and a jog in the fence is all the space that can be afforded it from the wide fields of the adjoining two hundred acre farm. The single small closet is set nearly in its front in the street. Two miles farther on is another well built stone school-house, where the only play-ground for the children is the public highway, and the closets are repulsive and exposed to all passers by.

With so little expense in making school-house grounds neat and ornamental, there is no excuse whatever for their owners, for not rendering them at least as pleasant to children as their own comfortable houses. They should be more so, that they may mould and improve the young mind in all that renders the country attractive.

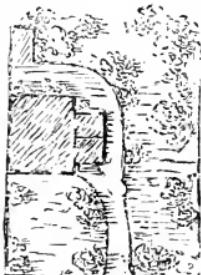


Fig. 251.

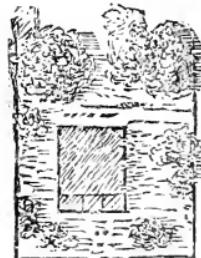


Fig. 252.

## IMPROVEMENTS IN FENCES.

## BARBED WIRE BARRIERS.

THE CONSTRUCTION AND MAINTENANCE of farm fences require constant and heavy outlays. Not less than seven hundred million dollars have been expended in the entire Union for this purpose, and fifty million dollars annually are required to keep them in repair. The ingenuity of inventors has been largely employed in devising improvements for rendering them more effective, cheaper and more durable. Various modifications have been successfully used, and different hedge plants have had their periods of popularity. The old zig-zag rail fence has been long and widely employed, and will continue to be, where land is cheap and timber abundant. The post-and-rail fence is stronger, more durable, and occupies less ground; and with a bank of earth at the bottom,

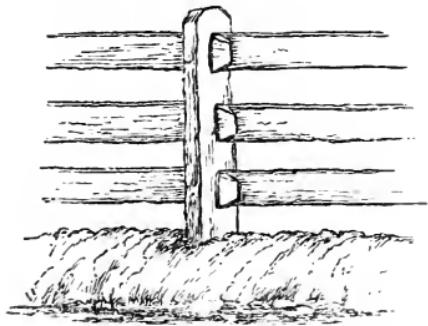


Fig. 253.

is still one of the best forms, (fig. 253.) The English hawthorn was largely planted for hedges many years ago in some districts, but the borer, leaf blight and rust destroyed them, and they have long since been generally discarded. Then the buckthorn had its day, but it failed for want of thorns and stiffness of growth. Twenty years ago, or more, the zig-zag

board fence, without posts, was widely recommended and adopted, and a multitude of patents were granted for various modes of connecting the ends. Strong winds frequently laid them on their sides, and they have passed out of use. Of later years, honey locust and osage orange hedges have been largely planted, and when properly managed and cared for, they have made excellent barriers. But few are willing to give them sufficient attention in cultivating while young, and in keeping well cut back. The honey locust is valuable at the North on account of its hardiness, and its formidable thorns render a well made hedge impassable. Its tall growth, and its deficiency in natural "hedginess," render continued care necessary to keep it close and compact in growth. The osage orange is rendered equally formidable by its more numerous and smaller thorns, but being less hardy it is frequently winter killed, unless growing on a dry bottom or subsoil, or near a line of tile drain. With such drainage, the writer has efficient hedges of the osage orange more than thirty years old, that are likely to continue for many years to come.

Like the honey locust, it requires constant attention to keep it within bounds.

A new era in fence-making has opened within a few years by the manufacture of the barbed wire, of which there are many modifications and a large number of manufactoryes. This wire is valuable for adding to the efficiency of the older fences and hedges, and the chief object of the present article is to point out how this wire may be advantageously employed.

One of the best farm fences made of wood and forming a straight line, is the one invented by E. W. Stewart, and described several years ago in the *COUNTRY GENTLEMAN*. Full directions for its construction, with additional improvements in setting the posts accurately and rapidly, with illustrations, were given in the eighth volume of *RURAL AFFAIRS*. Fig. 254 is a view of a portion of the fence, showing the manner in which the

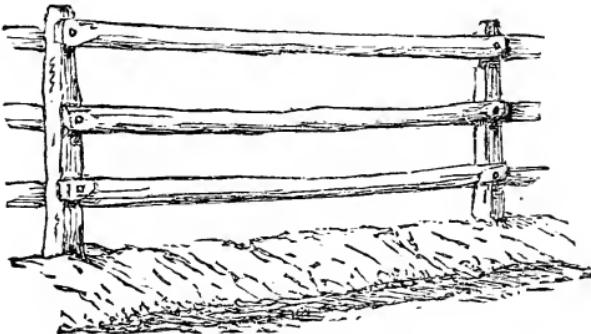


Fig. 254.

rails are secured to the posts on opposite sides, by screw bolts passing through the ends of the rails and the post. This fence, if well made, will remain without any need of repairs for a long series of years, and will last as long as the posts remain. A barbed-wire stretched along the top, or instead of the top rail, will prevent animals from attempting to pass it. Plowing and banking at the bottom obviates the necessity of a bottom rail, assists in drainage, and prevents horses from leaning against it. A serious objection to the adoption of this fence by farmers, is the difficulty of procuring the long screw bolts which are required for its construction.

The common post-and-board fence forms a good farm barrier, and has been extensively used in the country. As commonly made, it is not strong enough to resist bulls and unruly horses, which frequently tear off the upper boards. Additional strength is given by nailing a stout top board on each side of the post, and surmounting both with a strong cap-board on the top of the sawed ends of the posts, as shown in the cross-section by fig. 255. But a much simpler, cheaper and more efficient protection

is to stretch a single line of barbed wire along the top of the fence. It may rest on the top board, or run along the tips of the posts, as in fig. 257, or the top board may be omitted and the barbed wire take its place,



Fig. 255.

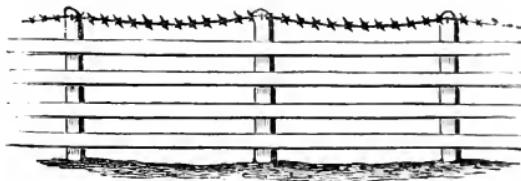


Fig. 256.

as in fig. 256. Strong board fences, which had been repeatedly torn asunder by a herd of unusually lawless horses belonging to a neighbor, were rendered perfectly impassable to them for years afterwards by the simple and cheap remedy of a single barbed wire on the top. Even a

weak fence is thus made practically strong.

It is only in neighborhoods where civilization has made but partial progress that swine are permitted to run in the streets, and where tight fences below are required. In such cases a single wire just below the bottom board, as shown in fig. 257, will be sufficient to exclude them, and such a fence will answer a good purpose for the boundaries of small hog pastures.

Many serious accidents to horses, and occasionally to other animals, have occurred where barbed wires have been wholly employed in the construction of fences. Being nearly invisible, animals have heedlessly dashed against them and become badly lacerated, and the damage has been greatly increased when they have been caught between, or been entangled in the wires. Some additional and more visible barrier should therefore always accompany the wires. In regions where small stones are common, a ridge of these placed along

under the wires and between the posts, will answer a good purpose. The adjacent fields will be improved by the removal of these stones. This line of stones need not be a regularly built wall, but they may be

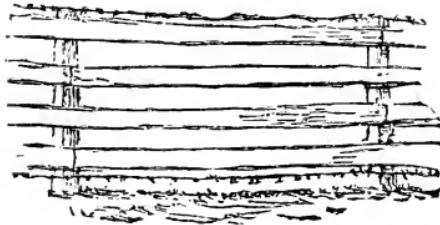


Fig. 257.

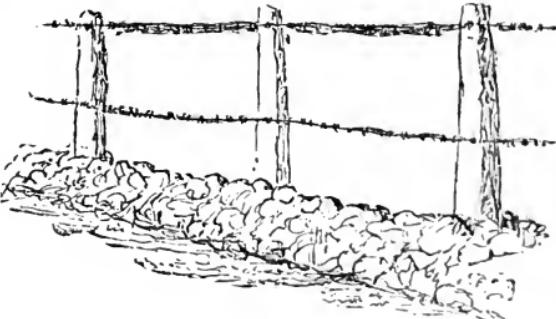


Fig. 258.

placed loosely, evenly and regularly, as shown in fig. 258. Fig. 259 is a cross section. Animals dislike setting their feet on them. As the wind obtains no purchase on such a fence, and as little pressure is ever exerted

against it, the posts need not be deeply set, the stones about them affording additional support. This line of stones may be two feet high and three or four feet wide.

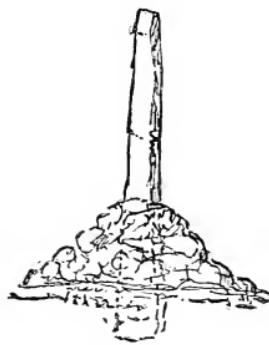


Fig. 259.

Where stones do not exist, a cheap substitute is a bank of earth. A few furrows are plowed on each side, and the earth thrown up into a smooth embankment, about two feet above the bottoms of the ditches on each side, fig. 260. Such a fence as this, with two barbed wires for cattle and horses, or three for sheep, is one of the cheapest and most durable that can be constructed. The posts need not

be heavy: they may be placed at least a rod apart; they may be cheaply set, as deep holes are not required; the embanking is done readily with the plow; and lastly, the wires are stretched rapidly on the posts. The bank becomes sodded with grass, and, together with the ditch, will prevent animals from blindly striking the barbs. This fence is likely to become widely adopted for sub-divisions of farms.

The cheapest form of the barbed fence is where a line of trees may be used for supporting the wires, as shown in fig. 261. A line of maple or other shade or timber trees will answer the purpose, and the fence may be

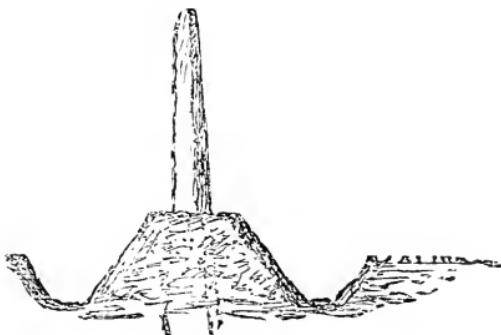


Fig. 260.

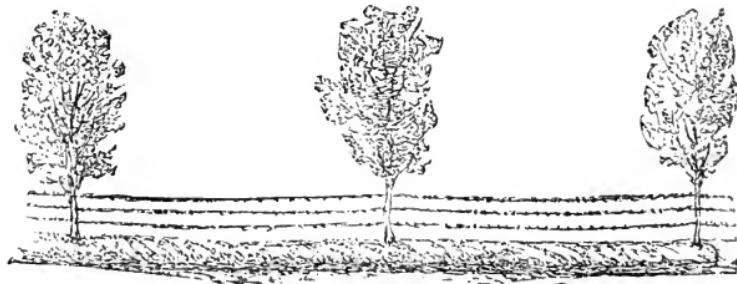


Fig. 261.

completed (with the ridge or bank of earth) when they are two or three

inches in diameter. An end view of the line of trees and cross-section of the bank is shown in fig. 262.

The cost of such fences may be readily estimated by counting one post to every rod, and 50 cents a rod for the three barbed wires. The labor of construction may be reckoned at about 20 cents a rod, making the whole expense less than \$1, or about 80 cents for two wires. An important item of saving is in avoiding all necessity for repairs for many years. The cost will vary with the price of posts, and with the ease or difficulty of forming the embankment of soil.

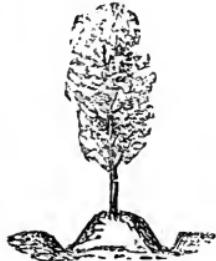


Fig. 262.

In all barbed wire fences the wires should not extend for a distance of more than 20 or 25 rods, that the expansion by heat and contraction by cold may not be too great—the ends being secured to stout posts set at these distances apart. Galvanized wire is better and more durable than wire covered with paint.

#### HEDGES AND THEIR MANAGEMENT.

Hedges possess strong advantages and formidable objections. The most impregnable, as the honey locust and osage orange, are difficult to keep in shape on account of their rapid growth and repulsive thorns. Those of a more inoffensive character are easily trimmed and cut back, like the buckthorn and privet among deciduous hedge plants, and all among evergreens; but they do not alone constitute a sufficient defense. Evergreen hedges are much admired on account of keeping green through the entire year. Perfect barriers may be made of them by enclosing barbed wires along their whole length. These wires are placed in position by stretching along the line on light, temporary posts, in successive years, so that the growth of the hedge may enclose them and hold them among its numerous branches where they cannot become displaced. When the plants are about twenty inches high, stretch the first wire, just resting on their tips or upper forks. The hedge soon grows and encloses it. Additional wires, as may be needed, are placed in position in successive years. Two wires will be quite enough in most cases. One alone would exclude nearly all intruders. Three might be needed for enclosing fruit gardens. These wires, when once covered, cannot be bent or thrust aside; they are stiffly held by innumerable branches. Such a fence has not the objection of being invisible to animals. Norway spruce is the strongest growing evergreen; hemlock and arbor vitæ may be made efficient by the enclosed barbs. Among deciduous plants the buckthorn would doubtless prove the best, as it is easily raised from seed, is transplanted with great facility, is perfectly hardy, has a natural hedginess, and, except on rich ground, has a very moderate growth. The wire used for these purposes should be galvanized, and not painted, as it is to remain many years.

Fig. 263 shows how such an evergreen hedge is started. The young plants of Norway spruce are placed about two feet apart. The distances might be greater if longer time could be allowed for the branches to meet and fill the spaces between. If placed two feet apart, and the line of the

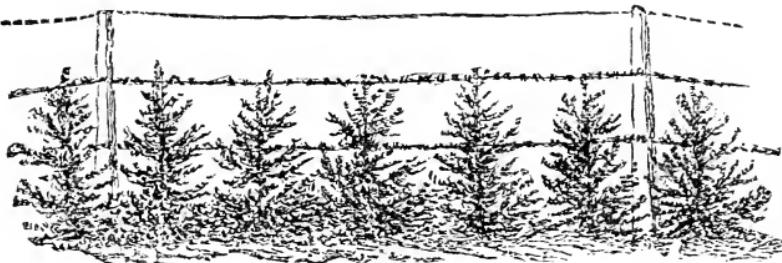


Fig. 263.

hedge is kept properly cultivated, the spaces would be well filled in three or four years; if three feet apart, five or six years might be required. The dotted line at the top shows the place of the third wire when the evergreens reach it, if a third one is required. It may not be necessary to cut back evergreens like deciduous plants, but if the Norways, after they are fairly started, are pinched back early in summer, so that no side shoots shall be over six inches long, and no leaders more than a foot, the hedge will be more compact and beautiful.

A hedge should never be *sheared*, so as to form a smooth wall of verdure. It should be cut back by taking off every longer shoot at a fork, leaving no stump. This work may be performed rapidly after some practice, either with a knife or with shears. When the exterior is smoothly sheared, a close, dense stratum of foliage is formed, shutting out the light from the interior, which in a few years becomes a mass of bare branches. Fig. 264 represents a portion of such a hedge, with a cross-section at the nearer

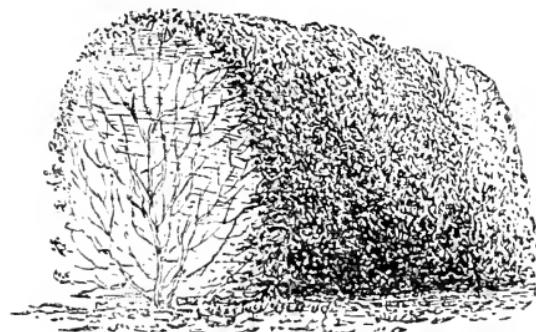


Fig. 264.

end, showing the interior entirely destitute of foliage. Such a hedge, usually left broad at the top, causes the lower branches gradually to die, and the whole hedge perishes sooner than if properly pruned. If simply cut back with a knife, or with shears, leaving an irregular surface, as in fig. 265, the interior foliage will be fresh and dense for a long time (as shown by the cross-section at the nearer end,) and the hedge itself will live longer.

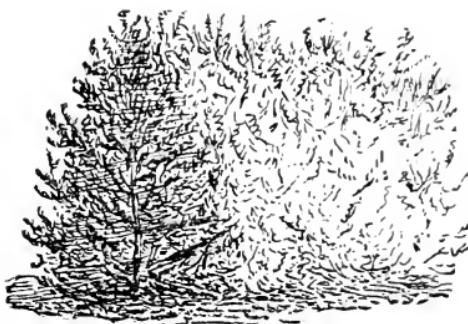


Fig. 265.

Fig. 266 represents a screen, the trees planted 8 or 10 feet apart, and bearing two wires. Such a screen will answer well for some of the subdivisions of the farm, and for the windward boundaries of barnyards. Norway spruce trees, if planted eight feet apart, will meet and form a continuous screen in eight or ten years.



Fig. 266.

when nurseries were overstocked, trees a foot and a half high could be purchased for thirty or forty dollars a thousand, or even less, but more commonly the price is double or triple this sum. Smaller trees may be had at lower rates.

It is not probable that hedges of any kind will ever be generally adopted as farm barriers; the labor of keeping them cut back will deter farmers generally from planting them extensively, but they will answer well for enclosing fruit gardens, and the taller screens will be valuable for cattle yards. The fences represented by figs. 254, 258 or 261, or some of their modifications, promise to become more extensively useful.

**EARLY PEACHES IN ENGLAND.**—The Garden states that the Amsden and Alexander peaches were ripened in fruit houses by Mr Bond, in Shropshire, on the 24th of April, 1880. They were started, with gentle heat, about December 20th, giving four months for the completion of their growth and maturity. They are pronounced very promising for forcing.

## THE NEWER STRAWBERRIES.

WITH NO KIND OF FRUIT can new varieties be so easily and rapidly produced as with the strawberry. The pistillate sorts must be fertilized with a staminate to make them productive, and every seed therefore from this cross-fertilization is capable of originating a new plant. Multitudes of new sorts are thus constantly brought into existence, a few of which, perhaps one in ten thousand or in half a million, may be worthy of propagation. The history of the changes which have been made in approved lists, in each ten years, if fully given, would show fluctuations not to be found with any other fruit.

Forty years ago few cultivators heard of any sorts but the Duke of Kent, Large Early Scarlet, Methven and Hovey's Seedling—the latter a great acquisition, and continuing the most popular variety for many years. Ross' Phœnix soon followed, was highly praised, and was soon forgotten. Some English varieties, as British Queen, Deptford Pine, Elton and Swainstone, were tried to a limited extent, but did not meet the public demand. Years afterwards Burr's New Pine stood at the head of the list for excellence, equalled at a later period by Hooker. Peabody's Seedling would have had a longer run if more than one good berry could have always been found on a square yard of space. Longworth's Prolific and McAvoy's Superior held a high position at the West. Many new sorts arose and fell into oblivion, although possessing special merits, among which were Walker's Seedling, Boston Pine, Black Prince, Cushing, Agriculturist, Crimson Cone, and others; but through a period of nearly a quarter of a century, and after all these have been discarded, the Wilson has been cultivated throughout the Union in greater numbers than all others put together. Many new sorts have been introduced as likely to supersede it, some of which are among the past, while the Wilson is still largely grown. Among the most successful is doubtless the Charles Downing, the reputation of which has become widely established. The Triomphe de Gand, for special culture and on strong soils, has held its position as long as the Wilson.

As an indication of the most popular sorts in 1858, twenty-three years ago, the following list of the ten best amateur sorts, and the ten best for market, which received the highest votes at the summer meeting of the Fruit-Growers' Society of Western New-York, are named in the order of their approval :

FOR AMATEURS.—Hooker, Burr's New Pine, Large Early Scarlet, Hovey's Seedling, Wilson's Albany, Jenny Lind, McAvoy's Superior, Triomphe de Gand, Peabody and Trollop's Victoria.

FOR MARKET.—Large Early Scarlet, Wilson's Albany, Crimson Cone, Genesee, Hovey's Seedling, Hooker, Cushing, Scott's Seedling, Longworth's Prolific and Iowa.

More recently great attention has been given to originating and to the careful selection of new sorts, and notices therefore of those which have attracted wide public attention, may be acceptable to inquirers.

#### NOTES ON THE VARIETIES.

In the following list the varieties are arranged nearly in the order of their ripening, the earliest being placed first. There may be a few exceptions

to this order, variations resulting from climate and seasons. The figures are of medium sized, not large berries.

**CRYSTAL CITY.**—This variety, during the few years it has been in cultivation, has obtained a wide approval both at the East and West for its earliness and good quality. It is medium in size, conical; in color rich scarlet, and sweet in flavor, like *Triomphe de Gand*;

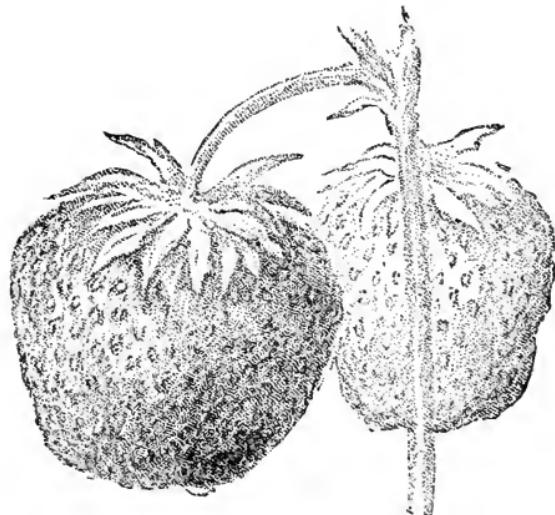


Fig. 267.—*Duncan*.

ripens several days before the Wilson; plant vigorous and productive. Too soft for distant market.

**DUNCAN** (fig. 267.)—For good size and excellent quality the Duncan stands nearly alone among the early sorts, if it receives good culture. It is rather large in size, roundish oval, large ones slightly cox-combed; flesh moderately firm; flavor excellent. It originated in

Ulster county, N. Y., with J. G. Lucas, who made of it a profitable market sort. It requires a strong, rich soil.

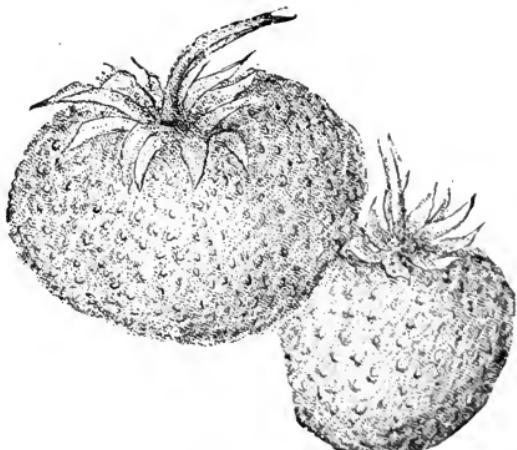


Fig. 268.—*Duchesse*.

DUCHESSE (fig. 268.)—Full medium in size; bright scarlet; flesh rather firm, of fine flavor. E. P. Roe of Cornwall, says of it: "Enormously productive, from 50 to 200 berries to a plant, in hill culture. I regard it as the best early standard berry." In other localities it has not succeeded so well, and by some it is discarded.

PIONEER.—One of Durand's new sorts. Large, very good, scarlet. Roe says: "The foliage dies during winter, but the root sends up new strong growth." It is vigorous and productive, but the foliage burns on light soils.

CRESCENT (fig. 269.)—Large, conical, slightly depressed at the apex, rather soft, bright scarlet, somewhat acid, and with a quite moderate flavor; variable in quality; plant remarkable for its hardiness and vigor,

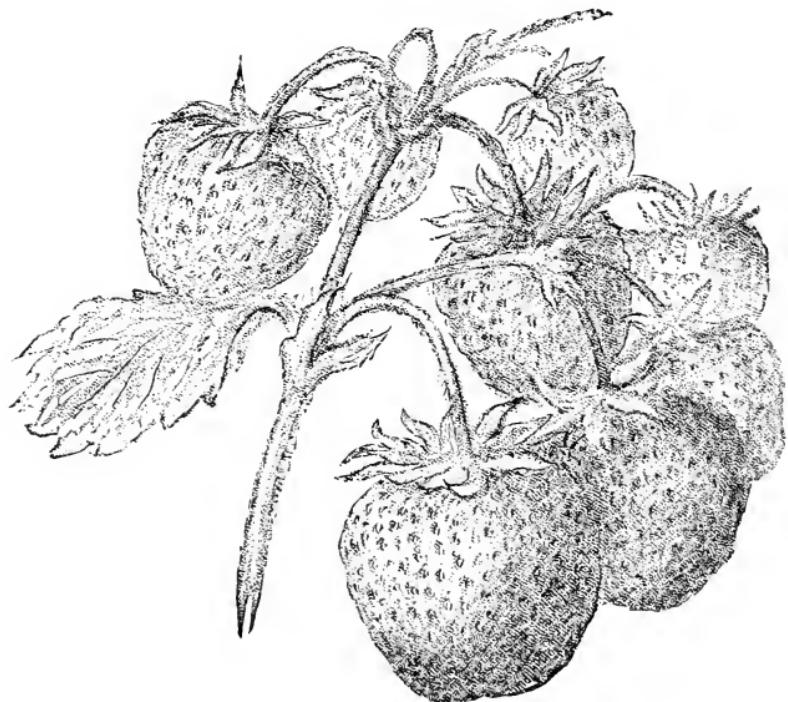


Fig. 269.—Crescent.

and for its enormous productiveness, which will render it popular, notwithstanding its second-rate flavor. Its free growth without care has induced many to neglect its culture and to become disappointed from its smaller size. Raised by Wm. Parmlee, New-Haven, Conn.

CINDERELLA.—A handsome early berry, rather large in size, conical, regular and uniform; bright glossy scarlet; moderately firm, with a good aromatic flavor. It requires hill culture and cutting of the runners; moderately productive; desirable for the garden.

**BIDWELL.**—Berry conical, light scarlet, glossy and very early; new. E. B. Underhill of Poughkeepsie, N. Y., says: "If not lacking in foliage, it will rival the Sharpless." Originated at South Haven, Mich.

**PROUTY'S SEEDLING.**—Large, long conical, bright scarlet, glossy; flesh moderately firm, and of fair quality; vigorous and very productive; feebly staminate; requires rich soil.

**CAPTAIN JACK** (fig. 270).—Berries medium, regular conical, bright

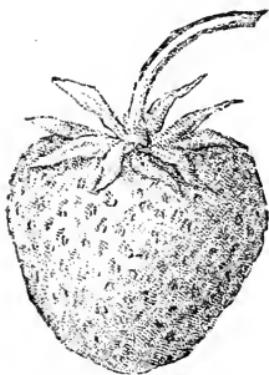


Fig. 270.—*Captain Jack*.

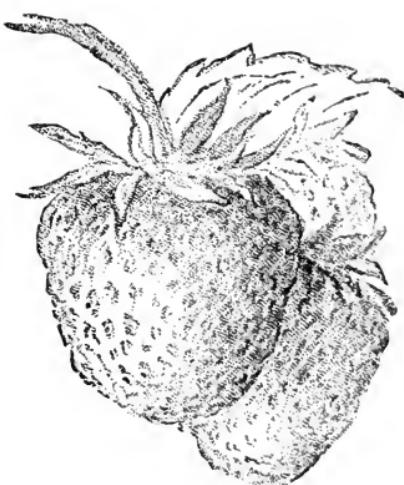


Fig. 271.—*Forest Rose*.

scarlet, rather acid, not high flavored. Its extreme productiveness renders it popular in many localities, especially in Missouri and at the West; while on the other hand it is discarded by many. The plants are very hardy, and the leaves come out after winter with a deep green color. Raised by S. Miller, Missouri.

**FOREST ROSE** (fig. 271).—Medium or rather large, oval, nearly regular, rarely cox-combed; color fine scarlet, rather acid, often quite pro-

ductive, but more frequently a moderate or poor bearer; stamens often nearly obsolete.

**MONARCH OF THE WEST** (fig. 272).—Large, light scarlet, ovate, a little flattened, and with a distinct furrow down on both sides, nearly

Fig. 272.—*Monarch*.

*Monarch*.

regular; good, but not high flavored. Succeeds in most localities East and West, but is only a moderate bearer.

**GREAT AMERICAN.**—With the highest culture this is a very large and good berry, but with neglect it entirely fails. Charles A. Green writes: "The Great American is very large, of good quality, deep, bright red; round and regular in form, and moderately productive. Its place is in the garden of the enthusiast—it has not vigor for ordinary field culture, it is best on strong soils."

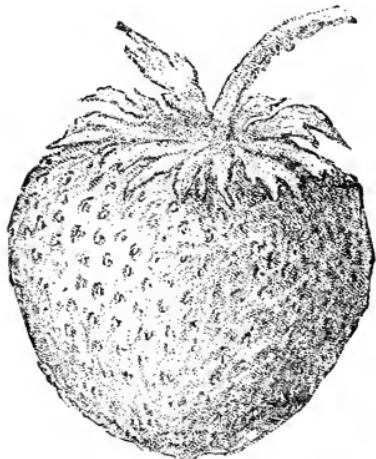


Fig. 273.—*Cumberland*.

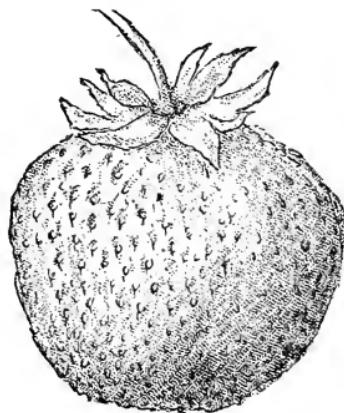


Fig. 274.—*Seth Boyden*.

**CUMBERLAND**, (or Cumberland Triumph,) (fig. 273.)—Very large, roundish conical; unusually uniform and regular in form for so large a fruit; calyx large and partly lobed; stamens not largely developed, and in some localities it is benefited by a staminate fertilizer. The large size of this strawberry, its productiveness and good quality render it valuable for home use; it is too soft for distant market. E. B. Underhill of Poughkeepsie, N.Y., says: "It produces more quarts, and always outsells the Wilson." Raised by Amos Miller of Pennsylvania.

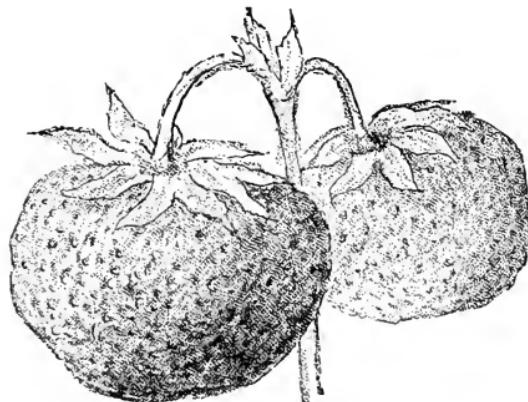


Fig. 275.—*Black Defiance*.

**BOYDEN**, (or Boyden's 30, or Seth Boyden,) (fig. 274.)—Large, sweet;

has proved valuable for market in some localities, and a poor bearer in others. It requires high culture and cut runners.

**BLACK DEFIANCE** (fig. 275.)—Medium or large, roundish conical, dark crimson, firm, high flavored; for the garden.

**COWING'S SEEDLING**.—On light soils large, bright color, high quality; moderately firm. On strong, heavy soils it becomes overgrown and mis-shapen.

**SHARPLESS** (fig. 276.)—This well-known new sort has reached a very high reputation during the few years since its introduction, but the vote has not been unanimous in its favor. In some localities it has not borne

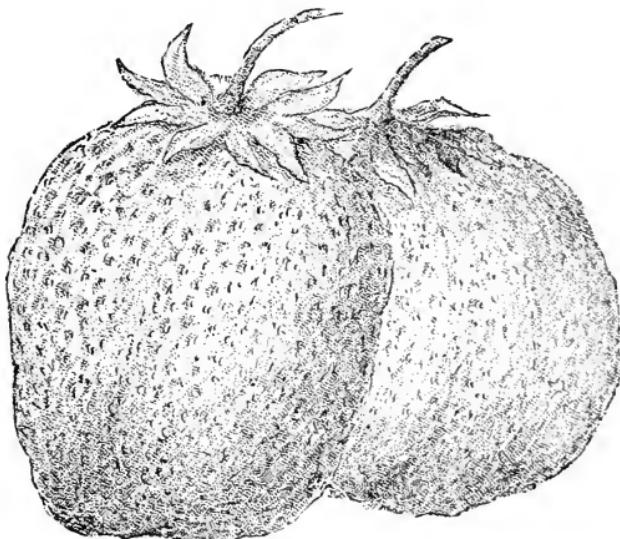


Fig. 276.—*Sharpless*.

well, nor been of high quality. E. B. Underhill says: "It has not driven the Monarch, Cumberland or Boyden from the field as large sorts." C. A. Green writes: "It has more than met my expectations. Its great fault is its lack of lustre. I dare stump the world to produce a superior. The largest berries only are inclined to be irregular. It is second-rate if over-ripe. It will never be popular for distant shipment." Roe says "it is carpet-bag in shape." Its chief value will be for home and near markets. It ripens a little before or about the same time as the old and well-known Kentucky.

**PRESIDENT LINCOLN** (fig. 277.)—Size large to very large; the large berries quite irregular; flesh moderately firm, sweet and of fine quality. In some places it has proved a poor bearer. Its chief value is for the garden.

**GLOSSY CONE**.—Size medium to large; beautiful; a perfect cone in

form; flesh solid, but not high flavored; often productive, but sometimes not. Raised by E. W. Durand.

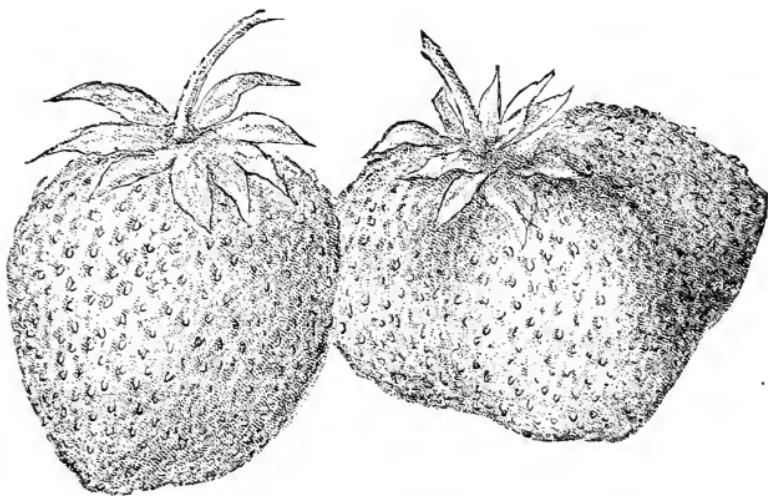


Fig. 277.—*President Lincoln.*

**MINER** (or Miner's Great Prolific.)—Large, regular, roundish; bright red; very productive; in quality not quite equal to Charles Downing, which it immediately follows. E. P. Roe thinks it has a long future, and that it is as promising as the Sharpless.

**CENTENNIAL FAVORITE.**—Large, regular, dark scarlet, of high flavor; late; moderately productive; discarded by some cultivators.

**CONTINENTAL.**—Large, obtusely conical, regular, dark red, firm, good; productive under hill culture, and sometimes bears well in narrow rows.

**GOLDEN DEFIANCE.**—Ellwanger & Barry say: "We consider this and the Windsor Chief the two finest and most productive late varieties." Roe says: "For three successive years this has been the best late berry on my place, and one of the most beautiful. If its runners are cut, it is exceedingly productive. Unless it changes its character, it will win its way to the front rank of popularity." The berries are medium to large in size, regular, dark crimson; flesh firm; flavor very good; pistillate. Raised by Amos Miller, Pennsylvania.

**WINDSOR CHIEF.**—Large, round, slightly approaching conical; dark crimson; flesh moderately firm, rather acid; plant exceedingly vigorous and productive; pistillate. Ellwanger & Barry say: "The best late variety for market." The "Queen of the Market" appears to be identical with this variety. The Champion closely resembles the Windsor Chief, but is often slightly smaller in size.

GLENDALE (fig. 277).—Fruit large, handsome, long, conical; never coxcombed; bright red; flesh firm, rather acid, not of high quality; a valuable late market sort. E. B. Underhill writes: "Very valuable for market, because firm and productive, but much inferior to Kentucky for home use." The calyx is very large, serving as a useful packing in shipment.

Messrs. Ellwanger & Barry say:

"Among the newer kinds that have fruited in our collection, we regard the following the most valuable: Sharpless, Crescent, Crystal City, Golden Defiance, Windsor Chief and Black Defiance. Sharpless, owing to

its size and good qualities, commands the highest price in our market."

Fig. 277.—*Glendale.*

its size and good qualities, commands the highest price in our market."

## SYMMETRY IN FARM ARCHITECTURE.

**A** N IMPORTANT CONTRIBUTION would be made to the landscape appearance of farming regions, as well as to the ornamental effect of single places, by a proper attention to neatness, symmetry and architectural taste, in the construction of the exterior of farm buildings. Costly ornament is not recommended, but rather a tasteful simplicity; expensive material is not required to produce the desired effect, for a judicious use of simple materials may accomplish more to a cultivated eye than costly marble worked into awkward forms. A more pleasing structure may be made with unplanned boards used with judgment and skill, than by the most elaborately worked and polished wood in the hands of a bungler.

The few suggestions given in this brief article will be neither scientific nor technical, but such as will be readily understood by any reader, and they are intended for general application—architectural details not being taken into consideration. The cheaper and more effective ornamentation by tree-planting is of course all-essential, but with pleasing forms in building, a complete combination is effected.

Before proceeding to details, it is proper to remark that in all the mod-

erate or smaller structures usually seen in the country, no attempt should ever be made for ornament or show alone. There should be a manifest utility in everything; the *beauty of fitness* should be constantly obvious. A projecting roof, for example, should convey the impression to the spectator that it is made for the shelter of the walls, and ornamental brackets are added for its support. A wooden chimney solely for the purpose of matching a real one of brick, would be contrary to true taste. A steeper or more ambitious roof than interior comfort requires, would be equally objectionable. Heavy columns and a light support are obviously out of keeping. A railing or a balustrade in a position where it cannot be used with comfort becomes an unpleasing object.

The following examples are given as practical illustrations of the views above presented. Fig. 278 represents an old square house, such as was frequently seen half a century ago, and is occasionally at the present time.



Fig. 278.—Awkward Square House.



Fig. 279.—The same Building Altered.

Its form is heavy and awkward; and when its large frame becomes slightly contorted by age, it has a still more repulsive appearance. Fig. 279 is the same in dimensions, and with a similar arrangement of the rooms inside. The little additional cost has added greatly to its exterior.



Fig. 280.—Larger Systematic Dwelling.

more essential for the longer line of the larger dwelling. This gable exhibits the manifest utility of forming a hood or shelter to the triple window over the door, as well as admitting more light than could be secured from a shorter window under an unbroken line of roof. For a regular dwelling of this size, the uniformity of the exterior is

small gable in the middle of the front side of the roof (as in fig. 280) cannot be added, as it should obviously be placed over the door, which in this plan is not in the middle. In the larger dwelling shown in fig. 280 the central position of the front door admits this gable, which is the

lessened by placing a bay window at the end, and it also adds to the capacity and pleasant expression of the room.



Fig. 281.—*Simple Farm House.*

roof, like those of figs. 279 and 280, and small window hoods, it might be adopted occasionally to advantage.

**RUNNING TO EXTREMES.**—It often happens that when any particular style becomes fashionable or modish, it is carried to a grotesque extreme

by persons who are ignorant of true taste. In their eagerness to be in the latest fashion, they adopt tawdry uncouthness. We see this in heavy cornices on light buildings, as in fig. 282, where an attempt is made



Fig. 282.—*Heavy Cornice.*



Fig. 283.—*Moderate Cornice.*

to engraft a Grecian facade on wooden clapboards, instead of a neat and moderate projection like that shown by fig. 283.

The Grecian temple, in its place, has an imposing expression, but is wrongly employed for a common dwelling. We sometimes witness such an attempt as that represented by fig. 284, with tall and ambitious columns in front of a common house built of wood or brick. The quiet and seclusion



Fig. 284.—*Grecian House.*

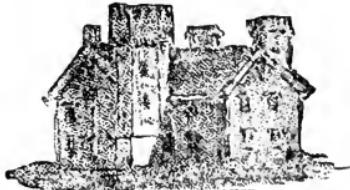


Fig. 285.—*House for Defence.*

of a hospitable home is lost in the public mart, court-house or exchange. Worse still, if possible, is the incongruous association of classic pillars and unclassic walls and windows.

Again, the attempt is sometimes, but rarely, made to imitate obsolete baronial grandeur, by engrafting the castellated style on a common dwelling, as in fig. 285. The turrets and battlements are no longer needed

for the protection of families against the arrows and darts of marauding bands, and it has been centuries since such structures could resist artillery. The additional objection exists of incongruity between the towers and common windowed walls. Fig. 286 has not the objection of a want of harmony, being wholly a castle on a miniature scale, but like the other is entirely out of place in a country not infested by armed bandits, but where the security and quiet of peace always reigns. Yet a popular work on American landscape gardening represents and recommends both of these styles for private dwellings. They have pre-eminently the fault of a want of fitness.

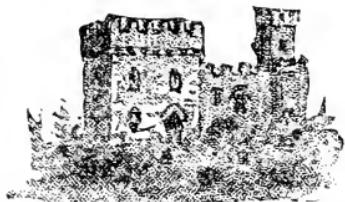


Fig. 286.—*Castle.*

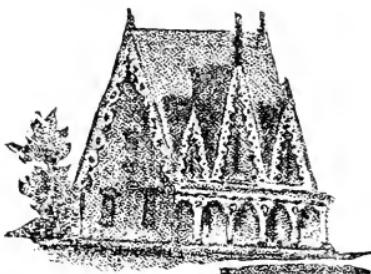


Fig. 287.—*Excessive Steepness.*

**GOTHIC STEEPNESS.**—Years ago, when the cottage Gothic style was introduced, the roofs of that style of building were made so much steeper than the former flat roofs, that builders possessing little architectural knowledge thought that the steeper they were made, and the further removed from the previous mode, the more fashionable they would become. The extreme thus produced, and represented in fig. 287, is an



Fig. 288.—*Gothic Dwelling.*

exact copy from a figure in a publication on rural architecture, which appeared some years ago. Scarcely a remark is necessary in contrasting this building with the one represented by fig. 288, with its moderate and tasteful form, or with the simple cottage style of fig. 289, which represents a small country or village house, with regular outline, and with the

eaves, window hoods and door covers sufficiently projecting to give the whole a finished and sheltered expression. About the same time that



Fig. 289.—*Symmetrical Cottage.*

the above mentioned faults begun to prevail, the attempt was made by some builders to obtain a great deal of ornament at small expense, by means of a huge and tawdry verge-board—fig. 290.

One of the later fashions, which has been largely adopted of late years



Fig. 290.—*Tawdry Verge-boards.*

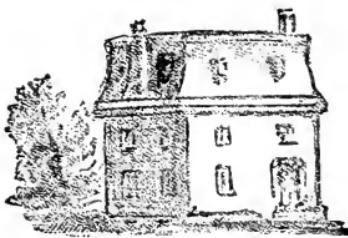


Fig. 291.—*French Roof.*

in some parts of the country, is the “French roof,” fig. 291. This roof, in some of its varying forms, may do well with its dome-like appearance for large public buildings, such for example as the New-York post-office, and for structures of a similar character and magnitude, but it is heavy for a small residence, and does not possess the merit of simple *fitness* for shelter, the expression of which is conveyed by such a roof as in fig. 289.

**SOME DETAILS.**—A few of the figures here given will show the general



Fig. 292.



Fig. 293.



Fig. 294.



Fig. 295.

form of some of the parts of buildings employed to produce a pleasing

effect combined with utility. Fig. 292 is a curved window or door hood; in fig. 293 it is straight and plain; fig. 294 exhibits one with double roof, and fig. 295 represents a window with awning over a balcony.

#### BARNs OF RESPECTABLE APPEARANCE.

Works on landscape gardening sometimes inform us how to conceal barns from view by the dense planting of trees. They take for granted the erroneous assumption that a barn is necessarily an ugly object. There is no reason why it should be so. On the contrary, with a well designed exterior, it may become a positive ornament, conveying to the mind of the spectator the completeness of the farm residence. It may have a high finish outside, or it may be made of unplanned boards, and in either case may alike have a symmetrical or pleasing outline. The addition of screen trees increases the ornamental effect. The mistake must not be made of making a barn resemble a house outside, as this would conflict with the idea of fitness, but the fact should be at once obvious that the building is a barn, however architectural its outline may be. It is not necessary to incur additional expense in producing a good ornamental effect. Rough boards may be employed to excellent advantage, and if these, after the building is completed, receive a heavy coat of crude petroleum, (applied



Fig. 296.—Carriage-House.

rapidly with a coarse brush,) they will be in a better condition to withstand the weather and decay than if covered with a coat of paint, while the cost of the crude oil will be many times less.

Fig. 296 represents a small barn or carriage-house, with sufficient ornamental addition in a projecting roof, door covers, &c., to give the whole an attractive exterior. It is given merely to show how the same style of finish



Fig. 297.

may be applied to larger barns to advantage, and with little additional cost.

The smallest structure may exhibit the taste of the owner. A simple cow-shed, built of cheap material, as shown in fig. 297, would be admitted by any one as being better than that shown in fig. 298, nearly the only

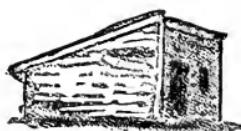


Fig. 298.

additional expense being the upright battens, the benefit of which, in stiffening the walls and excluding cold currents between the boards, is greater than their cost.

The barn, when placed near the dwelling, should present a better finish than if on a remote part of the farm. There should be some resemblance

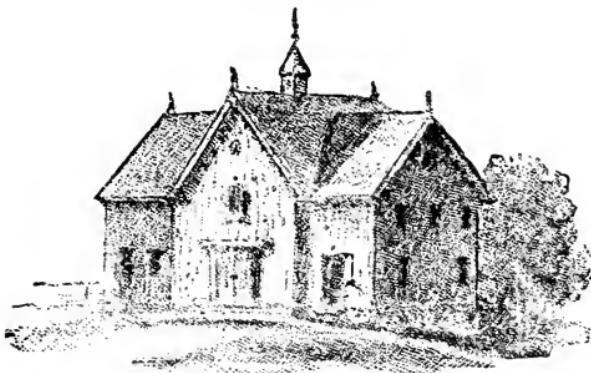


Fig. 299.

between them in the style of the exterior. A Gothic residence, as in fig. 268, for instance, may have such a carriage-house or barn as the one represented by fig. 299. If more distant, this resemblance is less necessary,

and a large barn for holding the main crop will appear well if constructed like the one shown

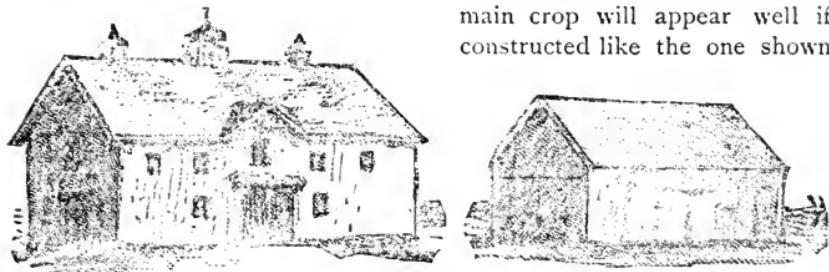


Fig. 300.



Fig. 301.

in fig. 300. The most casual observer will admit that such a building has a better appearance than the old barn in fig. 301, in which no attention whatever has been given to effect.

It was quite common some years ago to build barns with a curb or gambrel roof, like fig. 302, with the claim that greater space was secured with the same exterior. There are, however, several disadvantages. It requires framing a double set of rafters and an extra plate on each side, and requires nearly double the labor in shingling. The inside space may be more cheaply obtained by slightly increasing the length of the posts, say two or three feet at most.

Fig. 303 shows the curb roof, with the common roof in dotted lines, and the small economy of exterior covering in the former is obvious,

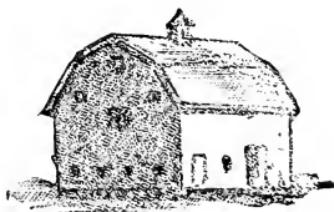


Fig. 302.—*Curb-roof Barn.*

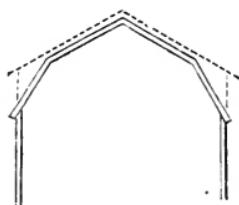


Fig. 303.

while its external appearance is not in its favor. This mode of building has consequently nearly passed out of use.

The few hints contained in the preceding article are given to invite attention to the subject, in favor of tasteful simplicity in the exterior of buildings, and not as a complete treatise on the subject.

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## THE IRRIGATION OF MEADOWS.

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BY AN AGRICULTURAL ENGINEER.

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**G**RASS IS A CROP of which we can never have enough. Even with a maximum yield, the farmer or dairymen must depend upon green fodder crops, both to help out his pasture and his winter feeding. Grass is the basis of our agriculture, the main dependence of all our live stock, and therefore the key to success in all other farm operations. Every farmer knows this so well that it may "go without saying." Whatever means therefore can be made available for the safety of our present average crop of grass—for the present year is typical of too frequent dry seasons, which reduce the yield so disastrously—and whatever methods may be practiced for its increase, are of the greatest importance. Irrigation is the only sure way to attain these desirable ends. Without water the farmer labors and waits in vain. The richest soils are as barren as the driest desert if moisture is withheld. But with copious watering poor soils, and even a blowing sand, may be made to produce grass bountifully, and, in the producing of a valuable crop, may become year by year improved in condition, so that in time they may be profitably brought under a system of general agriculture. Grass is a product that changes the mineral constituents of the soil to a certain extent into vegetable matter, and in its constantly growing, maturing, dying and decaying roots and stems, which are perpetually renewed, *phœnix-like*, from the and dust

ashes of former herbage, constantly supplies the vegetable portion of the soil which is required for complete fertility.

Irrigation is no new thing. It is as old as the human race, for the garden of our first parents was watered by a river. It is not a practice confined to dry soils and climates, for in England (the climate of which is considered as excessively moist, and where it rains two days out of three), irrigated meadows exist wherever the conformation of the land and the supply of water combine to make them possible. No opportunity of this kind is lost, for an irrigated or water meadow is so valuable as to form a very desirable addition to a farm, and one that is always considered in the rent too, the money value of such a meadow ranging from \$500 to \$2,000 per acre, and the rental paying the usual rate of interest there current upon that enormous valuation. Here, although our rainfall is one-half larger than that of England, yet our hot sun and parching winds, the irregularity and frequent unseasonableness of the rains, render the practice of irrigation of vast importance to us. Its extensive use will not only serve to utilize water which now flows away uselessly, but it will tend to store up the excess of water, and hold it in the soil, releasing it gradually and evenly, much in the same manner as was formerly effected by the wooded lands which bordered our streams and water courses. In addition, the evaporation from the watered lands will remedy to a proportionate extent the dryness of our summer atmosphere, and, be this ever so small in effect, it will be an advantage as far as it goes.

The practice of irrigation is by no means costly. Where water can be procured in a convenient position above the level of the land to be watered, the cost will be trifling. Under the most troublesome circumstances, the necessary arrangements will cost less than thorough drainage of the same land; yet what talk there is of drainage, and what enormous sums of money are yearly spent to carry off the surplus water from land, while nothing is thought or heard of the need of bringing that water back again to other lands where it is sorely needed! If drainage is good for wet lands, irrigation is equally good, its counterpart in fact, for dry lands. Once made, the works needed for irrigation are made for a life-time, and the greater part for centuries. I have seen European water meadows and irrigating ditches which have been in use, or so said to have been, for a thousand years, and some of them were constructed by the old Romans, whose engineering in some respects, certainly so far as solidity of work is concerned, surpasses our modern practice. And in our own country we may see, in the Southwestern territories, water meadows and ditches which were made long before the discovery of this continent by Columbus, and which are still in use. So in cheapness and effectiveness of construction the practice of irrigation commends itself to our notice most favorably. But where water must be raised, one need not deny himself of its advantages while wind, water and steam are such cheap motive powers, for the raising may be cheaply done.

## HOW TO MAKE A WATER MEADOW.

A water meadow, strictly speaking, is a level piece of land on the bank of a stream, so situated that the land may be banked to retain the water, and ditched to carry the water off when the soil is saturated, and that the water of the stream may be brought by its natural gravity from a higher level above, or may be raised by damming or by some cheap mechanical power, such as a water wheel or windmill. For the better under-

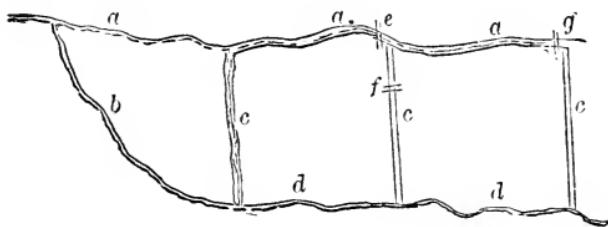


Fig. 304.—*Plan of Water Meadow.*

standing of the necessary arrangement the accompanying diagrams may be useful. In fig. 304 is given a plan of a typical water meadow. The stream is shown at *a a a*; the ditch by which the water is taken from the stream at *b*; the banks to retain the water at *c c c*; the distributing ditch

at *d d*; the waste outlets at *e*, *f* and *g*. In fig. 305 is given a sec-

tional view of the surface of the

Fig. 305.—*Section along the Stream.* same meadow from the upper to the lower part, parallel with the course of the stream, and in fig. 306 is shown a section across the meadow from the high ground to the stream. The reference letters are the same in all. The method of construction is as follows: The land is first plowed and leveled by means of a scraper, if necessary, so as to get a smooth surface with a very gentle slope towards the stream



Fig. 305.—*Section along the Stream.*

or down the course of it. The water should be brought on the meadow at least two feet above the surface of the ground—the height however may vary according to circumstances; if the land is very nearly level, or made level, six inches or a foot of water may completely flood it; or if the slope is more than two feet in a ten-acre field, cross banks may be made to divide the field into sections, each of which may be flooded from the other, as in fig. 305. It is rarely that the land is so nearly level that ten acres may be all flooded with six inches of water, but such cases do occur, for as I write I look out upon a tract of land of nearly thirty acres which could be wholly covered with this depth of water, so gentle is the slope of the ground.

Fig. 306.—*Section across the Meadow.*



The water is brought from the stream by a ditch or channel with a fall only sufficient to carry the water, and which diverges gradually as the land slopes with the fall of the stream (*b*, fig. 304) until the boundary of the proposed meadow is reached. The water is then led along the upper boundary of the land (*d d*, fig. 304, and *d*, fig. 306) in a channel made with as little slope as possible; it may be perfectly level if desired, and this is important, because one or two inches lost in the fall may either leave out some land that might be watered, or make it necessary to construct higher retaining banks, or a deeper ditch.

The construction of the conducting channel *b*, and the distributing channel *d*, should be such that when the lower part of the ditch *d* is filled, the water should stop flowing, and a level be reached from the inlet at the stream to the end of the ditch. This, however, may be varied to suit exceptional cases. The water is then ready for distribution. Small wooden boxes should be built in the bank of the ditch made, as shown in fig. 307, having sliding plugs, which may be drawn out to let the

water escape. When the water is required, the plugs are drawn out and the flow escapes on the meadow. There should be a discharging box at every one hundred feet, and the box

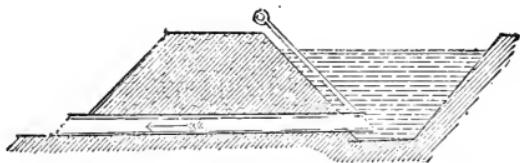


Fig. 307.—*Water-Box in Ditch and Bank.*

need not be more than six inches by two or three inches, or twelve to eighteen square inches of sectional area. The water is left to flow until the ground is flooded, if it is capable of this, in the manner shown by the dotted line in fig. 306. Otherwise the flow is distributed so that it is spread over the whole surface, and runs in a sheet down the slope to the foot of the meadow, where it escapes at the waste-gate *g*. In the former case the water is retained by the banks *c c*, fig. 304, and may be left on the surface for twenty-four hours, or even longer at certain seasons.

Where the nature of the ground obliges it, and the land has been laid out into sections, as in fig. 304, and one section has been filled, the flow may be continued and the gate at *f* be opened to turn the water on the next section, from which it escapes into the stream at *g*, unless it is required for still another section below it. But it is preferable to use the water only for one section at once, and to flow each separately from its own individual part of the ditch, *d d*, for water is a fertilizer as well as a food for plants, because of the saline or mineral matter it may have in solution or suspension. River water is especially valuable in this respect, on account of the fine sediment which it carries, this being very considerable in times of freshet. This sediment is deposited when the water is retained on the meadow for any length of time, or is made to flow very slowly over the surface.

Another method of watering meadows is by flowing instead of flooding. The water in this case flows over the surface from a series of ditches and furrows, in the manner shown in fig. 308. The water channel *a* corresponds with that at *d* in the former plans, and is supplied with water in a similar manner. But the distribution is effected differently. The main channel supplies other inferior ones, *b b*, and these in their turn supply others, *c c*, from which the water is caused to overflow, over their lower edges, down the slope. The number of ultimate channels depends upon the nature of the ground; they should be sufficiently numerous to give every portion of the land an adequate supply.

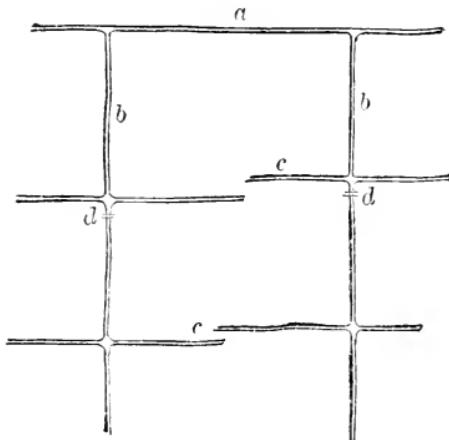


Fig. 308.—*Field Watered by Flowing.*

is constructed similarly to that shown in fig. 307. The others, *b* and *c*, should be made wide and shallow, so that no obstruction is offered to cutting the grass either with scythes or machines, and the surface of each is covered with grass to preserve the conformation. The form of the water furrow is given in fig. 309, and one made by a plow for temporary use in fig. 310. The latter is made by running a plow along the line of the required channel, and finishing the furrow with a hoe. The current of water may be stopped wholly or partially, and wholly or partially diverted into lateral channels, by small hand-gates of sheet-iron or zinc, fig. 311,



Fig. 309.—*Permanent Water-Furrow.*



Fig. 310.—*Temporary Water-Furrow.*



Fig. 311.—*Hand-Gate.*

each provided with a handle and two sharp feet, to give it a stronger hold upon the ground when used in grassy ditches. These are thrust into the ground wherever it is desired to turn the water into lateral furrows, as at *d*, fig. 308.

This manner of distributing water may be used for hillsides upon which springs may be found, or upon irregular ground upon which water may

be gathered in reservoirs or ponds in rainy seasons, or be raised by mechanical means.

Irrigation by springs upon hilly ground is frequently available and may be very usefully employed. The water from one or more springs may be brought together by means of drains, and directed into a main channel as at *a*, fig. 308. From this the distributing channels must be

made to run with the least possible slope along the side of the hill so as to lose as little elevation as may be, and following the curves of the level as shall be required. If the supply is copious, this channel may be returned as shown in fig. 312, from one side to the other of the field, and made to overflow in places, as shown, in such a manner as to spread the water in all directions down the slope.

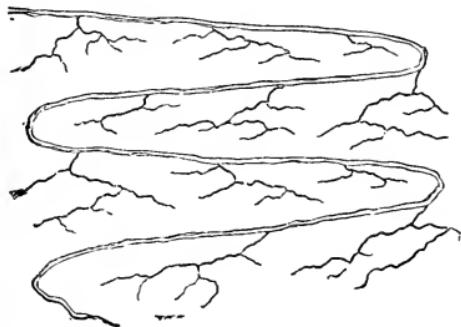


Fig. 312.—*Watering a Hillside.*

This distribution may be assisted or controlled by using the hand gates above mentioned, or by placing stones in the channel.

The effect of watering a meadow is remarkable. Where warm spring water is to be procured, very early grass may be grown, and a hillside may be kept green during a whole winter by the flow of a copious spring over it. Winter irrigation however is to be very cautiously used, and never where severe frosts may occur while the ground is saturated. In some localities, where ice may not be formed more than two or three inches in thickness, a water meadow may be flooded with benefit throughout the whole winter, and the water drawn off as soon as growing weather occurs. But this even is an exceptional practice. Usually meadows of this kind are flooded early in the spring for a week or two during seasons of high water for the benefit of the alluvial deposits, as well as the moistening of the ground. A thorough soaking of the ground is generally sufficient to give an early crop of grass for hay or for green feeding, and as soon as the crop is removed a watering is given for another week or two, until a second growth is well started. In this way several cuttings in a season may be procured, and an aggregate of ten to twelve feet of grass may be produced in the several crops in one season. Or periodical watering may be given whenever it is desirable, at night being the best period; but never in times of freshet, when the water is full of sediment, and when the grass is long, lest it be so sanded as to interfere with the cutting. Watering when the grass is tall is never required, and would be injurious, causing the herbage to lodge and fall down. If such a mistake is committed, the water should be drawn off and the grass cut without delay, to prevent it from rotting.

The heavy growth caused by irrigation must be supported by adequate fertilizing. A top-dressing of fine compost in the fall, of superphosphate of lime, plaster, Peruvian guano, and other fine fertilizers, only should be used.

The varieties of grass that may be grown in water meadows are numerous. Timothy, red-top and red clover will flourish under moderate watering, but in flooded meadows will be killed out by several days' exposure to the water, which will only excite the growth of some other grasses. *Poa serotina*, fowl meadow grass; *Poa trivialis*, rough-stalked meadow grass; *Agrostis vulgaris*, red-top, and *Arrhenatherum avenaceum*, tall meadow oat grass, are all suitable for water meadows; while an excellent and remarkably prolific grass, the common blue joint, *Calamagrostis canadensis*, thrives to perfection on them, and has yielded at one cutting six tons of good hay to the acre over natural water meadows of hundreds of acres.

A water meadow, being a permanent grass field, will need to be kept in good condition by occasional partial re-seeding, the use of some fertilizer, and smooth mowing, and occasional rolling. After the last mowing in the season, the water should not be turned on unless it is kept on all the winter, lest a dead aftermath cumber the meadow the next season and become an obstacle to the mowing. If such should happen, it would be advisable to burn the dead grass in the spring, on a dry, windy day, so that a clean sweep will be made; and the water should be turned on immediately.

The literature of the art of irrigation is but scanty, with the exception of some French and Italian works. The only American work on this subject is one by Henry Stewart, viz., "Irrigation for the Farm, Garden and Orchard"; the English works are confined to descriptions of the Spanish and Italian methods, with the exception of a chapter included in R. Scott Burns' "Outlines of Modern Farming."

[A complete and practical treatise, in the Spanish language, was published about two years ago by Prof. Andres Llaurado of Madrid, and probably represents the latest European practice up to that date. See notices in the COUNTRY GENTLEMAN for 1878, pages 680 and 809.—EDS.]

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PEACHES IN AMERICA.—A handsome book, published in London in 1839, contains the following statement: "It is no unusual thing to see an American peach orchard containing one thousand trees growing as standards, as the apples do with us, and after the juice is fermented and distilled, producing one hundred barrels of peach brandy. The Americans usually eat the pavies or clingstones, while they reserve the melting or freestones for feeding their pigs." Again: "In the United States the stones of the peach are sown on a seed bed. In the fourth or fifth year they produce fruit, and thus thousands of sub-varieties are produced; not one perhaps in ten thousand is fit for the table."

## WINDOW GARDENING.

ON RIDING LATELY through one of the large villages of New-York we counted more than four-fifths of the residences with blooming plants in the windows. This is not an unusual instance; the culture of flowers in pots has become almost universal in many parts of the country. Its pleasing influence, and the eminently beneficial effects in thus adding to the attractions of home, are sufficient reasons for offering every encouragement to the practice. As the cultivation of house plants increases, the more frequent are the inquiries for the best modes of management, and for selections of plants best adapted to growing in living rooms. To meet these inquiries is the object of the present article.

**POSITION FOR PLANTS.**—The first thing to decide when about to procure house plants, is the position where they are to be placed. The leading object with most cultivators of house plants is to secure blooming in winter, but an abundance of flowers at all seasons of the year should not be overlooked. Residents of towns and villages, who may have but little out-door space, may place their pots outside as well as inside the windows in the summer season, and obtain all they desire by securing beforehand a proper succession of plants, and by attaching to the windows suitable shelves and boxes. Compactly trained plants, combined with trailers and creepers, may be employed to give a fine display.

The sunniest window must of course be chosen in preference to any other, where practicable, or a southern or eastern exposure selected. If the plants are to be placed outside, strong brackets may be employed to support the box, if it extends the whole breadth of the window; or if pots alone are used, a light shelf is to be secured to the brackets. Climbers may be trained on cords extended in any desirable direction, and trailers allowed to droop below.

**RUSTIC BOXES.**—For small houses, or for rear windows, rustic boxes have a pleasing appearance; but for front windows, or for large dwellings, rustic work, if employed at all, should present a neat, finished and symmetrical appearance, and resemble mosaic. Different modes may be adopted for making rustic boxes. They may be made of inch pine boards, and afterwards covered with twigs split into halves and fastened on with brads driven through holes made with a carpenter's awl. The twigs or branches selected for this purpose should be equal in size for each box, and may be of any size from three-fourths of an inch to an inch and a half in diameter. Or the bark of trees may be fastened on in wide sheets; it should be selected from trees so large as to have become rough or furrowed to some extent. As the boxes are much exposed to warmth and moisture, they are liable to decay soon if not protected, the best way for which is to soak the boxes well with crude

petroleum, by applying two or three coats with a coarse brush, and after drying a few days, nail on the rustic covering, and then give this covering another washing with the petroleum. This mode of treatment is both cheaper and better than paint for the box and varnish for the rustic work.



Fig. 313.—Wire Stand.

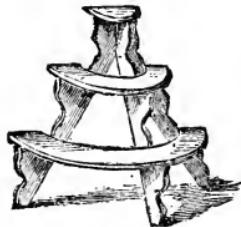


Fig. 314.—Wooden Stand.

Stands made of wire (fig. 313) have a neat appearance. Simple semi-circular stands of wood, (fig. 314,) well painted, and washed often enough to be kept perfectly clean, answer well.

For in-door plants the stands may be placed in front of the window to receive the pots; or instead of pots a continuous bed of soil may be placed in a box. This may rest on the stand or table, or it may be provided with legs and become a box and table combined, fig. 315. Or strong brackets may be employed for supporting the box, fig. 316. The importance of a piece of heavy oilcloth under the stands, to catch dripping water, will be understood by every housekeeper.

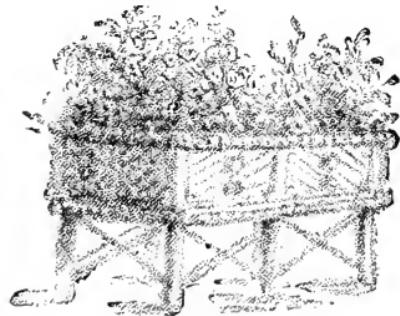


Fig. 315.—Rustic Box and Stand.

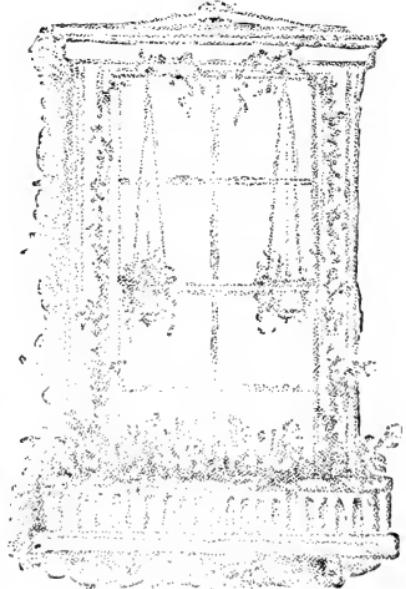


Fig. 316.—Flower Box on Brackets.

Rustic tubs, made of any material and covered as represented in fig. 317, for hyacinths and other bulbs, have an attractive appearance. An easy and

good way to make one of these combined contrivances is to place three or four pots on a board, cut just large enough to receive them; bind them together with a cord or wire, and then cover them with

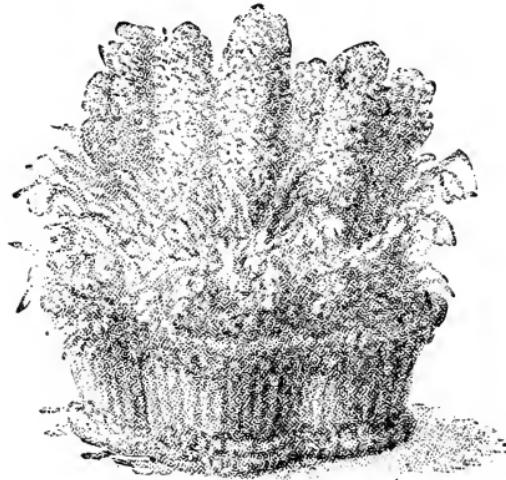


Fig. 317.—*Rustic Pot Covers.*

broad sheets of slightly rough bark from a tree, wiring on the bark. These divisions into parts prevent the heavy appearance imparted by a continuous box or tub.

**SUPPORTS FOR POTS.**—Single pots may be placed against the side of a window, by inserting two strong staples, to receive the iron sup-



Fig. 318.—*Support for Pot.*



Fig. 319.—*Hanging Support for Pot.*

port or ring in which the pot is set, the whole acting somewhat like a crane, fig 318. Another mode, which requires no explanation, is shown in fig. 319.

**WARD CASES**, by enclosing the contents, prevent the injurious effects of dry air and dust on the plants, and obviate frequent watering,

but are only adapted best to such plants as ferns, which will bear this confinement. The same advantages may be obtained, on a smaller scale, under a bell glass on an iron stand, as shown in fig. 320.



Fig. 320.—Bell Glass for Pots.

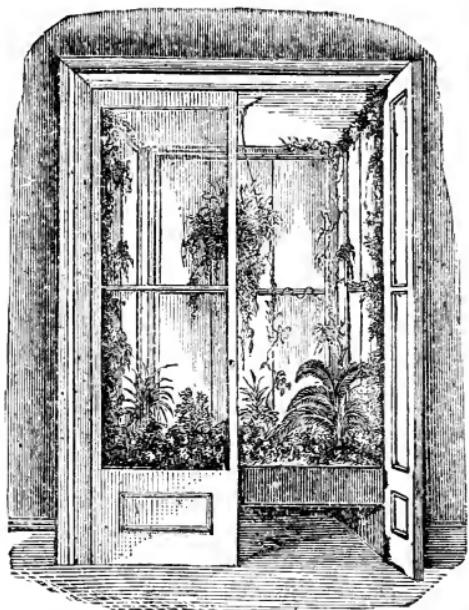


Fig. 321.—Bay Window Enclosed.

**BAY WINDOWS.**—These advantages (of security against dry air) may be partly obtained by house plants generally when a bay window is furnished with them, by inner sashes enclosing the space made by the recess. These inner sashes swing on hinges, and are opened or partly opened when warmth is to be given from the room, and closed to exclude dust or dry air, or to hold the moist air—fig. 321. The same end may be secured where there is no bay window, by constructing a case inside, a foot or so into the room, and extending down to the window sill, and half or all the way to the ceiling.

**THE BEST POTS.**—The common unglazed earthenware pots are best, and before using, whether old or new,

they should be well washed. If not

Fig. 322.

sufficiently ornamental, the covers shown in figs. 322 and 323 may be used, and will give them a neat appearance. These covers are sold at low prices at seed stores. If wooden tubs are used, they should not be painted or oiled, as the porous sides are useful in keeping the soil in good condition, and preventing souring. If the outsides of pots are washed every



Fig. 323.

two or three weeks, they will not accumulate mould, but will preserve a neat and fresh appearance.

**SOIL AND COMPOSTS.**—A good soil for the pots is of vital importance. As the roots have narrow quarters, the deficiency of space must be made up by rich food. A good mixture consists of about equal parts of turf and old cow manure, well rotted and mixed together. If the turf is taken from heavy or clayey soil, a portion of sand should be added. An addition of bone dust is often useful. It is not necessary that this course should be blindly followed, but equivalent ingredients will answer. Cow

manure one or two years old is found best for manure, and better adapted to delicate plants. Whatever the ingredients may be, they should be mixed and remain all summer, to become well incorporated. The best way of doing this is to make a square heap, as shown in fig. 324, placing the ingredients in

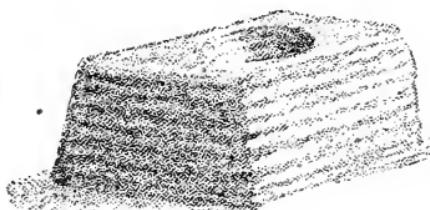


Fig. 324.

thin alternating layers, and making a depression at the top, holding one or more pailfuls of water, for keeping the heap moist in time of drouth. Pour water, slops, &c., into the cavity, as may be required, but do not make it too wet. Before using, mix the ingredients thoroughly together, and pulverize them well. Rubbing through a sieve accomplishes this end well.

**GOOD PLANTS IMPORTANT.**—As plants for the window do not have the advantages received by those which grow in the greenhouse, it is important that healthy and vigorous ones be selected for window gardening. Small and healthy plants are therefore to be preferred; they take up less room, and by pinching they may be kept in a neat, compact form.

**PINCHING-IN.**—The preservation of this symmetrical form is easily secured if the pinching process is begun early, but is difficult or impossible after the plants have grown tall and lank. Any one who has seen a plant properly thus treated,



Fig. 325.—*Fuchsia Trained Compactly.*

as for example the Fuchsia in fig. 325, will appreciate its incomparable superiority to a neglected plant with only bare stems.

OPEN GROUND TREATMENT.—Plants which are set out in the open ground, even with the surface, for growing during the summer, should remain in pots, (fig. 326,) so that they may be removed without checking

them when taken up for the house in autumn. The upper soil of the pot may be removed and replaced with fresh, rich soil, and the rest of the contents of the pot may remain, and additional vigor imparted by watering with weak liquid manure; if strong, it will be likely to ruin the plants. A better way, however, is to change them every month or two into slightly larger pots with rich soil, and water moderately, without



Fig. 326.—*Pot in Open Ground.*

applying liquid manure. But for many sorts the best bloomers are obtained in young plants, raised either from the seed in spring, or obtained from cuttings under glass set soon after mid-summer.

SUMMER WINDOWS.—The selection of plants for the window, must depend on the position in which they are placed, and on the treatment they are to receive. If for the outside, and fully exposed, such plants as grow freely and bloom well in any situation may be chosen. Green-house and hot-house plants for the outside should have a sloping glass cover, to retain moisture, and to secure more warmth. For both these positions, large showy flowers, with bright colors, are best. For the inside, and against the light, such as present a neat and graceful outline are to be preferred.

Fig. 327 represents the pleasing appearance given to the outside of a window by an awning, the colors of which partly harmonize with those of the flowers. These colors, however, should be rich rather than brilliant and flashy. Such windows

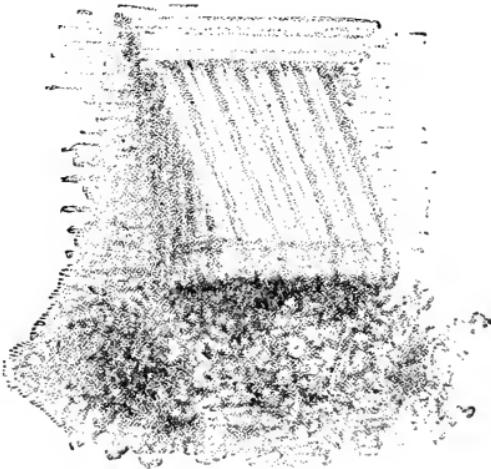


Fig. 327.—*Outside Garden.*

may properly face the flower garden or the ornamental grounds. The plants are set in a box on brackets, and should be free growers and bloomers, in rich, well watered soil.

**SHIFTING POTS.**—In removing plants from a small pot to a larger, see first that a sufficient quantity of draining material is placed in the bottom, and on this place enough soil to raise the upper surface of the roots to within an inch of the top. Run a knife around next to the pot, to make the soil separate easily. Press the soil between the roots and the sides of the pot with a strip of wood, so as to leave no interstices. Covering the surface of the earth with a flake of green moss from the woods, gives the pot a neat appearance, and prevents a crust from being formed by watering.

**FILLING POTS.**—The bottoms of boxes may be filled for an inch or two with broken charcoal, and for outside window plants, which need daily watering, a soil must be made that will not become too compact. A liberal mixture of sand, or of granulated charcoal, answers a good purpose. Well sifted coal ashes may be employed in the absence of either of these.

### SELECTING AND PROCURING PLANTS.

A distinguished florist says that "of the tens of thousands of pot plants sold in the spring from street stands, probably not one in ten survives." They are forced into bloom in small pots, have little vigor, and very few ever give another flower. Plants from a warm greenhouse should be gradually inured to the cooler rooms where they are to remain. If they are to be taken from the garden in autumn, they should be carefully potted early in September, and hardened in the shade outdoors, removed to the rooms as the nights become frosty, and have plenty of fresh air on warm and sunny days.

Among the plants which may be selected to decorate the windows of a living room are pelargoniums, callas, abutilons, Persian cyclamen, several species of oxalis, Chinese primrose, fuchsias, &c. Other sorts are favorites with different cultivators. As a general rule in making selections, choose old, well tried ones, and touch very lightly on high priced or new sorts.

**FOR NORTH WINDOWS.**—Where from necessity windows facing the north, or entirely shaded, must be chosen, the following plants may be selected as most likely to succeed well: Lycopodiums, ferns, centaureas, English ivy, maranta, canna, tradescantia, &c., which are cultivated for their foliage and not for flowers. Several small flowers do well in the shade, such as pansy, auricula, &c.

### SOME DETAILS OF TREATMENT.

The *Chinese Chrysanthemum* may be made to bloom during the last half of autumn and to the end of the year. For a fine display, much depends on a selection of colors, of which there should be a large number of white ones, to set off the yellow, orange and red varieties. When the flowering has passed, the plants are to be placed against a well lighted

window in a cellar, and watered lightly about once a week. As spring approaches they may be brought out, and more light, water and heat given to start new young shoots, which they will throw up, and of which young cuttings may be made. These are placed in pots of sand under a bell glass, and the old plants thrown away. Or large numbers may be obtained by dividing an old plant. These may be placed at once in the larger pots for blooming in autumn, or they may be changed successively from small to larger pots safely, with sufficient water. As soon as vigorous growth commences, pinch the tips, to keep them in a neat, compact form, but do not continue the pinching much after mid-summer. As soon as the flower buds appear, water with liquid manure; and if the manure water is supplied all the season they will grow all the better for it.

*Pelargoniums* are easily raised from cuttings, the most certain mode for which is described on page 230 of this volume of RURAL AFFAIRS. New or one season's plants which have not bloomed, furnish a more certain supply of flowers through winter. When the plants which stand in open ground are to be potted for winter, a circle should be cut around them a fortnight previously, a little smaller than the pots they are to occupy, to furnish them with short, new roots.

Cuttings of *Fuchsias* root readily when placed next to the rims of pots, and kept warm and moist, and they will bloom well the next year.

*Roses* succeed best when grown in pots, and not taken from the open ground; avoid over-watering or soaking with standing water, and if the soil is not rich enough, apply liquid manure once a week. Shower once or twice a week. Cut back each shoot that has blossomed, to a good bud.

The air of living rooms is usually too dry for *Verbenas*, but they may be kept in small pots placed on shelves close against the glass of the window, the room kept rather cool in the night and well aired in the morning, and every few days washed in a pan of tepid water. Strong plants from August cuttings should be used.

A correspondent of Vick's Monthly gives in substance the following method for obtaining a fine bloom from the *Chinese Primrose*, fig. 328. The seeds are sown in April or May every spring, for the plants are not worth much after they have bloomed all one season, and these are thrown away. The young plants obtained from the early sowing are set in small pots when well started, and plunged in a cold frame, taking care



Fig. 328.—*Chinese Primrose*.

subsequently to shade and ventilate them properly. The cold frame is regarded as absolutely essential to success. Before mid-summer the plants are set on the north side of a building, and the frame turned

about to face the north, and the sash opened enough to give plenty of fresh air. Some shade is required on very bright days, and the protection of the sash if a cold storm approaches. The plants are thus prepared for winter, and they will then bloom all winter and into spring.

*Hyacinth* bulbs for winter blooming should be kept cool and dormant in autumn, to prevent the new growth from starting and consuming the bulb. Plant in earth in a pot, and keep in a cool place so that roots may

form before the bulb starts. In water-glasses they become more exhausted than when planted in pots in the earth, and the latter mode is to be preferred.



Fig. 329.—*Cyclamen*.



Fig. 330.—*Bouvardia*.

The *Cyclamen* (fig. 329) is a beautiful plant for windows, and does best when a cool and moist air can be secured. The pots during summer should be placed in a cool and shady place till removed in autumn to the window.

*Bouvardias* (fig. 330) furnish some of the finest white flowers, as well as pink and bluish colors. Like the cyclamen, they need moisture, as well as a strong light. New plants are easily raised from cuttings, or from cuttings of the roots.



Fig. 331.—*Abutilon*.

*Abutilons* (fig. 331) more strictly belong to the greenhouse, but with care, and acquaintance with the needs of the plants, and the needed pinching-in, they have been made beautiful window ornaments. They require plenty of water and sunshine, and frequent sprinkling of the foliage.

There are many other plants which succeed well as winter bloomers, including such annuals and hardy perennials as are commonly grown

outdoors, but the limits of this brief article preclude further notices, the preceding being given as specimens of some of the best.

### LARGE WINDOW GARDEN.

A correspondent of the *COUNTRY GENTLEMAN* describes a miniature garden set against a wide show-window, on the north side of the building, which stands on the south side of an east-and-west street. The following description will afford some useful suggestions to those who have windows in the same position:

A shallow box, about three feet wide and eight feet long, made of inch boards, put together with white lead, fills the space, excepting that a papered board is interposed between the box and the front sash-bar. A little fountain in the centre contains in its basin a few sprays of *isolepis*—

the rush-like grassy plant often seen in hanging baskets—and one water lily. The narrow low-mounded bed, in which the fountain is set, is surfaced, like the other beds, with leaf-mould, over which spreads a gauzy covering of bright, moss-like *selaginella*. A ring of stars of a silvery-leaved sedum (*carneum*)

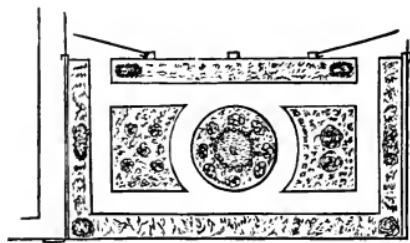


Fig. 332.—Window Garden.

shines out from the green of this central bed. The others have a few well-chosen plants in plunged pots—begonias, lycopodiums, silver-edged geraniums, ferns, artillery plants, a speckled arum, a fuchsia and a rose; but this latter has lost some of its leaves, perhaps owing to the gas, there being two large burners in the “sky” of this garden.

At the sides are two niches, like bowers, containing contemplative little figures, canopied by ivies, which wander up to the “blue sky.” Standing on brackets are two large goblets, containing pretty pebbles and goldfish. There is rock-work, too, in the mossy green, and some detached boulders, all of water-worn veined marble. Tall plants of the heath-like *fabiana* stand like sentinels in two corners, the giants of the place, two feet high.

### MANAGEMENT.

**GENERAL RULES.**—The treatment must vary more or less with circumstances; absolute rules to follow blindly cannot be given. But the general directions may be safely adopted, to give plenty of sunshine if possible; avoid a dry atmosphere, give plenty of fresh air whenever warm enough, and a little if cold; turn frequently; preserve symmetry; remove dead leaves; loosen the soil; re-pot as they need it, and keep a supply of prepared rich soil on hand, to use as required.

**WATERING.**—In watering plants in pots it will not do to pour on the water indiscriminately, without regard to the character or condition of the

plant. Succulent-leaved plants, such as the cactus, require very little water; callas and all semi-aquatic plants, need much more. Plants which are growing rapidly or forming flower buds, require many times as much as those in a nearly dormant state. Small pots dry more quickly than large ones, and may sometimes need water once or twice a day. Novices usually give small pots too little, and large pots too much water. Observation and experience will soon teach the right course to adopt.

**LIQUID MANURE.**—For rampant growers with full foliage, and especially as they approach blooming, liquid manure may be applied once or twice a week, but care should be used to have it weak. Many failures result from using it too strong. A spoonful of guano is enough for a gallon of water, or half a teaspoonful of liquid ammonia to the same quantity. It is better, however, to depend generally on a rich soil, with such changes of pots as may be required.

**FROSTED PLANTS.**—On very cold nights, when there is danger that the plants may be frozen, they may be either removed to some distance from the window, or if in fixed boxes, pin newspapers over or around them, or between them and the window panes. Two thicknesses of paper are more efficient by enclosing a thin stratum of air. Should they become actually frosted, remove them, before thawing, to a dark, cool place, cover the earth or top of the pot with stiff paper, and shower them with quite cold water from the watering pot as long as any ice can be discovered in the pots. Keep them where the temperature is a little above freezing, gradually raising the temperature for a few days, so as to inure them slowly to the warmth of the room.

Plants would thrive best if the temperature by night never went below  $45^{\circ}$  Fah., nor above  $50^{\circ}$  or  $60^{\circ}$  by day.

**DRY AIR.**—The dry air of living-rooms may be improved to a great extent by keeping water constantly in an evaporating pan, either on the stove, if this is used for heating, or in the air-chamber of a warm-air furnace, if employed for the purpose. To keep the air of the room properly moist, there should be at least eight or ten gallons evaporated every twenty-four hours for every room occupied during the day, containing two thousand cubic feet of air. The pan should be placed where it will receive heat enough to produce this amount of evaporation. The quantity must of course vary with the coldness of the weather, the air when heated having a greater capacity for moisture if cold without, than if warmer. This great amount of required water is scarcely ever appreciated, and is rarely supplied, and hence the common deficiency and failure.

**DUST.**—The dust which arises in rooms from sweeping carpets settles on the leaves, and seriously injures growth, and destroys the fresh appearance of the plants. The foliage should therefore be washed with tepid water as frequently as may be necessary. Using a carpet sweeper, which gathers the dust in its box, lessens the trouble.

## REMEDIES FOR INSECTS.

The aphides, or green flies, when few, may be removed with thumb and finger. Or they may be repelled with tobacco. This may be steeped in water, and the dark infusion thrown on the plants twice a week with a syringe. Or the leaves may be dusted with powdered tobacco or snuff. Or, still better, the plant may be encased in paper or muslin, under which a little tobacco may be burned a few times. The best way to do this is to place the pot on a table or broad board, on which there is an inch or two of sand, and then cover it with the muslin, or with any inverted vessel large enough, the sand making the edge fit closely. Burn the tobacco carefully under the cover, and let the smoke remain ten minutes. This remedy will apply to most insects. The green fly may be destroyed, when tobacco cannot be used, by procuring a few lady-bugs, and placing them on the plants.

The red spider makes its appearance when there is too much heat and too little water, and the best remedy is to place the pot on its side and syringe the under side of the leaves with cold water. Ants are caught and destroyed by pieces of bread steeped in sweetened water.

Rose-bugs may be caught on the plant. The grubs of the rose-bug may be cleared off from the roots which they infest, by shaking off the soil in summer and then replanting in fresh, clean soil. Worms among the roots are got rid of in a similar way. Mustard water for watering has been found useful for driving insects generally from the soil.

## CURCULIO CATCHERS.

THIRTY YEARS AGO very few owners of plum orchards understood why the abundant and newly set crop of young fruit all dropped to the ground before it was half-grown. The cause is now generally understood, and the little crescent mark, only a fifteenth of an inch long, is seen on every immature and fallen specimen. The insect makes the crescent-shaped incision, and inserts its egg, which hatches, and the larva cuts in toward the centre and destroys the value of the fruit. The peculiar habit of this little snout beetle, of folding its legs and dropping to the ground when shaken, renders its capture and destruction quite easy, by jarring down on stretched muslin sheets. The process is fully described, with illustrations, on page 233, vol. VI of RURAL AFFAIRS.

The most convenient mode for destroying curculios in orchards of moderate size, is represented in fig. 333. A piece of stout muslin, six or seven feet square, is stiffened by means of light wooden rods across two opposite sides, and these are kept apart by a cross rod through the middle. This rod is a little shorter than the breadth of the muslin, so that the latter assumes a slightly concave form. The operator holds the sheet by

this cross rod as a handle, under one side of the tree, while with a heavy hammer in the other hand he strikes on the iron plug inserted in the branch on that side of the tree. The beetles drop on the sheet, which being held obliquely, they roll down to the concave part at the lower side, where they are quickly caught and destroyed by a single roll of the thumb over the finger.



Fig. 333.—*Simple Curculio Catcher.*

on all trees, whether branching high or low, and the rough surface of the ground does not interfere with its operation. Unlike the contrivances for killing the insects in hot water or in oil, none but the curculios need be destroyed, the operator allowing lady bugs and other useful species to escape.

Another contrivance, for larger orchards, the invention of Edward Smith of Geneva, N. Y., consists of a similar hopper supported on legs (fig. 334.) A circular iron hoop about eight feet in diameter, has an opening on one side to receive the tree. This opening is closed around the tree by overlapping the ends. A tin cup at the bottom, holding several quarts, receives the dropping insects, which remain quiet so long as the hopper is kept moving from tree to tree. The iron-rod legs hang on the hoop, and being sharp at the bottom, stand firm when thrust into the soil. Two men carry it and work rapidly, or at the rate of three hundred trees in an hour. Like Dr. Hull's catcher, it requires a clean stem to the tree three feet above ground. When not in use, the legs are folded and it is hung up against the wall of the workshop or shed.

One of the best forms of curculio catchers for extensive work, was described some years ago in the *COUNTRY GENTLEMAN*, by M. B. Bate-

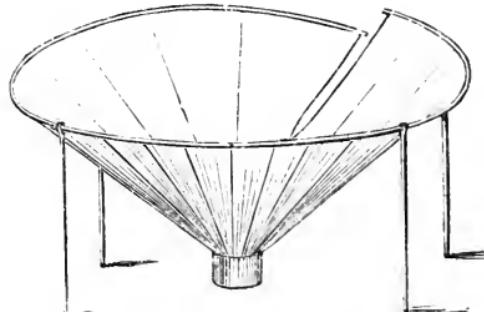


Fig. 334.—*Smith Curculio Catcher.*

ham, and stated by him to be a Michigan invention. It consists essentially of a large conical hopper set on a two-wheeled barrow (fig. 335.) The wheels are light and placed like those of a hand-cart. The hopper is made of oil-cloth, kept in shape by a light frame, and having an opening or slit on the forward side, to receive the stem of the tree as it is

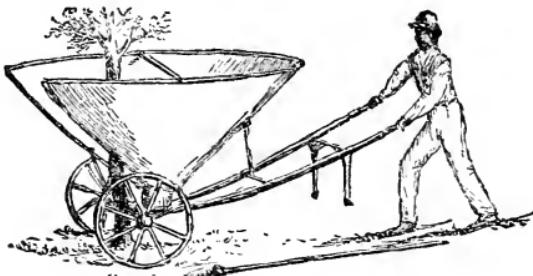


Fig. 335.—*Michigan Curculio Catcher.*

pushed forward. The oil-cloth being smooth, the insects slide freely down its surface, and the dew of morning does not wet and injure its working. At the bottom of the hopper a tin vessel is placed, containing kerosene or petroleum, into which the insects fall and are destroyed. This vessel is narrower at the mouth, the better to hold the liquid. The principal branches of the tree have small iron plugs set in them. The plugs are made by cutting up iron rods, about three-eighths of an inch in diameter, into pieces about four inches long, and they are inserted into holes bored an inch or so into the limbs with a breast-bit. A heavy hammer with a long handle enables the operator to strike a sharp blow, with a thrusting motion, on each of these iron plugs, while the hopper stands under the tree; the insects drop instantly, and are caught in the kerosene. This contrivance enables the operator to perform rapid and efficient work, and with a good sized hopper, a large orchard of plums, peaches or pears may be easily cleared each day of these destructive insects. One man, after some practice, can operate on three hundred trees in an hour. A little practice will enable him to judge how much oil to place in the vessel for each morning's catching.

Dr. Hull's curculio catcher (fig. 336) consisted of a broad, stiff hopper, covered with canvas, carried on a sort of wheelbarrow. The wheel was about three feet in diameter. The canvas was kept in shape on twelve arms or ribs, fastened to the solid frame of the barrow. The opening in front admitted the tree. A ram was attached to the front part of the frame, for jarring the tree. It was covered with leather stuffed with moss, to protect the bark of the tree from bruising. (It would have been more efficient if faced with a plate of cast-iron, to strike an iron plug inserted at the right height in the tree.) It is run against the tree three or four times, with sufficient force to jar down the insects, which are then

swept with a broom into pockets till they can be destroyed in hot water. To use this machine to advantage, the ground must be smooth, and the clear stems of the trees high enough to pass under. The largest size for

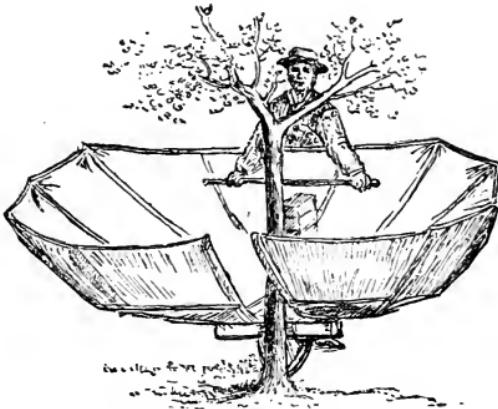


Fig. 336.—Dr. Hull's Curculio Catcher.

the hopper would be about ten by twelve feet. It was rather too cumbersome a machine for general use.

More recently the wheelbarrow was omitted, and the broad frame, covered with its stretched muslin, was strapped on the shoulders of a man who carried it, walking in the centre, and struck the tree with a hammer carried in his hand.

#### DESIGNS FOR CORN-CRIBS.

SEVERAL CORRESPONDENTS of the COUNTRY GENTLEMAN have given plans of corn-cribs which, in a condensed form for this work, may afford the reader valuable suggestions.

A New-Jersey correspondent gives the following :

I submit a plan of a corn-crib which I have recently finished, and which I find very convenient. It has all the facilities required in a crib. It can be filled direct from the wagon, and there are movable steps, or platforms, whereon to stand to fill the crib to the top. There is also a floor for shelling, which, when not in use, can be raised out of the way for loading. I give a drawing (fig. 337) of the frame of a single end bent. There are, as will be seen, two cribs, one on each side of the drive-way; each crib is 4 feet wide, outside measure, at the bottom, 6 feet at the top, and 10 feet high to the plate. This gives 50 square feet of section in each crib. With six bents, a crib 20 feet long can be had, giving 1,000 cubic feet, or a capacity for about 700 bushels of ears in each crib, when level

with the plate. The drive-way between the cribs is 8 feet wide, thus making the whole building 20 feet long, 16 feet wide, and 16 feet high from ground to peak of the roof. The crib is supported upon piers of

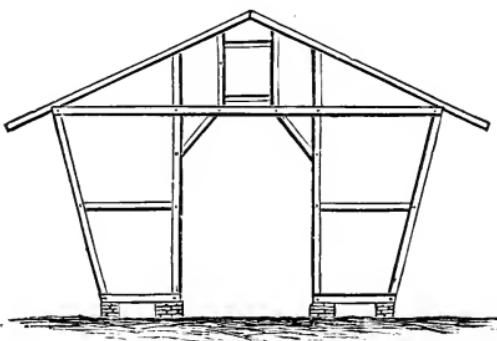


Fig. 337.—*Plan of Frame.*

brick, 8 inches square, under each bent. The frame is of 5-by-5-inch oak timber. The ends and sides of the crib are lathed up and down with 3-inch strips of oak, placed one-quarter of an inch apart.

The inside arrangement, however, is the unique part of the crib. There are movable beams of 3-by-4-inch stuff fitted across the drive-way, which rest upon the edges of the brick piers by which the bents are supported. These beams can be lifted out of their places and laid upon the ground beneath the cribs. A floor rests upon these beams. This floor is made of a series of five pairs of trap-doors (fig. 338) hinged to the posts of the bents, which doors turn up and hook to the sides of the cribs

when the road-way is to be used. Each door is as wide as half the width of the road-way, (that is, 4 feet, or nearly,) and is made of matched boards placed lengthwise of the crib, fastened together by cleats. The ends of each door rest upon cleats fastened at each side of the cross-beams. The hinges fit into corresponding slots made in the posts of the bents. The doors, when raised and hooked to the

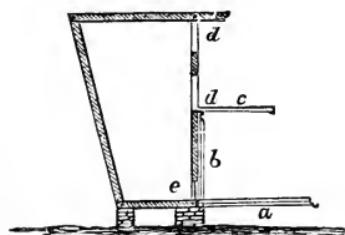


Fig. 338.—*Hinged Floors.*

sides of the crib, permit the floor beams to be removed. When the doors are down, they lie flush with the upper surfaces of the beams, and form a smooth floor, matched and jointed, upon which corn can be shelled and stored. Thus, when the crib is filled, there is a spacious room 8 by 20 feet, and 10 feet high in the middle.

To facilitate filling the crib from the wagons, there are cross-pieces bolted to the sides of the cribs in the wagon-way, and boards are placed upon these across the roadway from side to side. When the crib is

filled up to the lower loading doors, these are shut and bolted, and higher ones are opened, which are reached by the person standing upon the cross boards. This is shown at fig. 338, where the movable floor beam with cleat on the side is seen at *a*; the floor raised against the crib at *b*; the mounting board resting on the cleat at *c*, and the filling doors at *d d*. For convenience of procuring the corn from the crib for shelling, a number of sliding doors, *e*, fig. 338, are made near the floor, through which the ears may be taken with shovels and scoops when these are opened. The floors of the crib are made of matched hemlock boards. The whole cost of this crib was a little over \$100. It ought to be stated that the drive-way of the corn-crib is closed at each end with double doors secured by locks. This crib I believe is vermin proof.

It might be well here to describe an arrangement which I once made in the side of a barn for the purpose of making a corn-crib in it. The crib was built in one corner of the barn for about 18 feet in length. The siding boards were removed and other narrow siding boards were placed horizontally, as shown at fig. 339, with short blocks one inch thick here and there, to keep the boards apart. Ample ventilation with perfect protection from the weather was

Fig. 339. secured in this way and the cost of an extra building was avoided.

Another correspondent (at Auburn, N. Y.) furnishes the following design, with pig-pen and tool-house combined:

For a combined corn-house, pig-pen and tool-shed, I have never seen one that suited me so well. I have used it now two seasons, and it answers every purpose, and pleases all I show it to. To explain it I have drawn plans of the two floors. Fig. 340 shows the lower or basement, although it is all above ground, and fig. 341 the upper or second story. Mine is 18 by 48 feet, with posts 18 feet high, and gothic roof. It has 3-inch slats on sides, and matched pine boarding on ends, all thoroughly painted outside. It will hold fully 4,000 bushels of ears of corn. It can be built shorter or longer, to accommodate the quantity of corn wished to be stored. It is built near a side hill, so that by a little filling an easy roadway is obtained into the second story by teams, to unload corn, and it is long enough for two teams to unload at a time. Fig. 340 is the lower story, 7 or 8 feet high. In the end next to the wall I have a pen 16 by 18 feet, with alley, and the corn is handy to get at through a small door

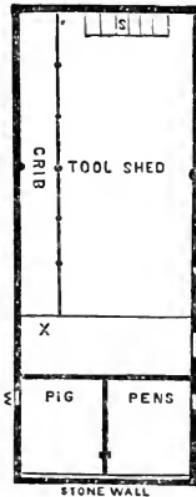


Fig. 340.

into the crib at *X*. Small windows slide at each side, to give light and ventilation, and throw out manure from the pens. *D* is the outside door into feeding alley.

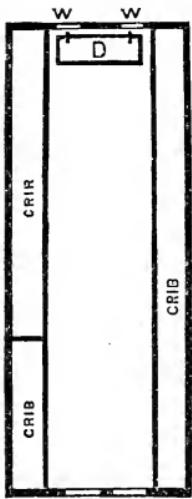


Fig. 341.

The pen has a tight floor of matched pine, to save all the manure. I take a crib, as shown, off one side of the remainder of lower story,  $3\frac{1}{2}$  feet wide, and leave the rest of the room open for a tool-shed, which gives a space for storing tools about 30 by  $14\frac{1}{2}$  feet. *S* is the stairs to second floor, having a door that lifts up, as shown in second story (fig. 341.) The second story is floored with 2-inch matched pine, (except where the crib extends up from lower floor) and forms a threshing floor or drive-way, 10 by 48 feet, with a crib on each side 4 feet wide the entire length of the building. *D D* are double sliding doors to drive through, which fasten inside. *W W* are two windows to give light. The cribs extend nearly to the roof, and are  $4\frac{1}{2}$  feet wide

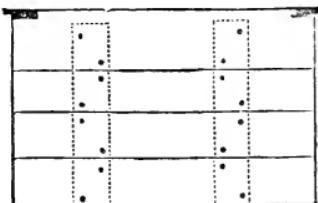


Fig. 342.

at top. The door at the top of the stairs is shown at fig. 342, and is made strong enough to support the weight of a team which may be driven upon that floor. I find this a capital place to cure my beans, which ripen early enough to thresh and get out of the way before corn is ready to husk; and being so high from the ground, the corn cures quicker and more perfectly than in cribs near the ground.

A farmer in Missouri has adopted the following plan :

The drawing (fig. 343) shows the gable; a crib 6 feet wide on either side; wagon shed 10 feet wide between, and an oat bin or workshop 7 feet wide on the floor overhead. The right-hand half shows the finished building; the left-hand the frame. The foundation is of broken stone well rammed into a hole 2 feet square and 3 feet deep, upon which white oak blocks, faced over the outside and beveled on the inside to the width of the sill, are placed. The sills are of oak, 8 by 9 inches; posts 8 by 8 inches; plates and stringers, 4 by 6; tie-beams, 6 by 8; joists for cribs and overhead, 2 by 8; rafters, 2 by 4, tapered to 2 by 2; braces and collar beams, 2 by 4, and laths for cribs 1 by 5 inches. Floors of matched and dressed pine. The outside posts are 10 feet 4 inches in length, tenoned at each end for the sill and plate. The inside posts are 10 feet in length, tenoned for the sill, and having an 8-inch slot at the top for the tie-beam, and also morticed for stringers in front of cribs.

By making these cribs 30 feet long, room will be secured for 3,000 bushels of ears, and cover for two wagons, with bins for 600 bushels of

oats. The crib posts should be  $7\frac{1}{2}$  feet from centre to centre, and upon the inside, doors may be hung for filling. When full to the bottom of the doors, close them and throw corn over the upper stringer. The laths

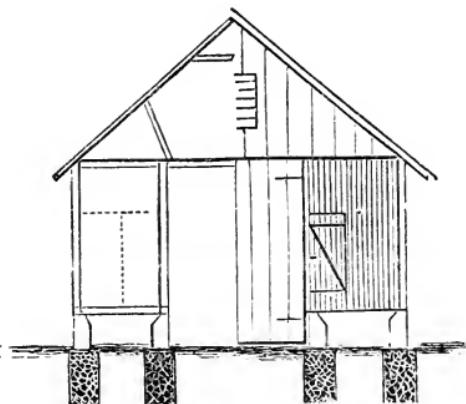


Fig. 343.—*A Missouri Corn-Crib.*

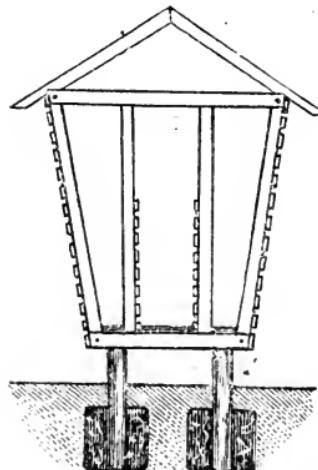
should be 5 inches wide, so that rats cannot climb them. The outside posts should be covered with a board of the same width. The crib joists should be let into the sills, so that the floor may lie tight on the sill. The oat bins should be sided up on the inside of the slanting braces, lapping like the siding of a house. A place for shelling is made by cutting off the end of either crib with a temporary partition.

The following was furnished by a correspondent at Oneida Lake, N. Y.:

My experience has taught me that corn in too wide a crib will not keep without moulding in wet seasons. Twenty-five years ago, in buying a farm, I came into possession of a crib 4 feet wide at the bottom, and flaring to 6 feet 6 inches at the top. After losing some corn from mould, I furrowed it out, and made it of the shape illustrated in the accompanying sketch (fig. 344). I am to-day building and putting up a new one of the dimensions and form of the illustration.

Fig. 344.

The passage-way is wide and high enough for a man to carry a bushel basket of corn on his shoulder. The slats in the passage-way are left open at the top to within 3 feet 6 inches of the floor, between the second and third beams from each end, the crib being 32 feet long. Temporary



slats with a small cleat three-quarters of an inch wide at each end, are let into the grooves formed by the ends of the permanent upper slats, and a cleat is nailed on the inside part, so that the crib can be filled full from end to end. The floor is of hemlock plank, 2 inches thick, and the longitudinal joints are left half an inch apart.

Twenty odd years ago I had some trouble from the heaving of the posts by the frost. I thought out a plan of fixing them permanently by grouting them, and succeeded perfectly. I grout all my gate posts, and my cheese-curing room stands on posts 3 feet 6 inches above ground, grouted, and I am never troubled with rats or mice. The holes should be dug out a little larger at the bottom than the top, and never smaller. The grouting is done thus: Cut a kerosene barrel into two parts for a tub to mix in; then take one peck of water lime and two pecks of clean coarse sand—the coarser the better—and put them into the tub, and with a shovel mix them together dry. Then add water and stir thoroughly till the grout is of the consistency of thick cream. Then throw into the hole clean coarse gravel enough to fill it up 3 inches deep; stir the grout quickly, and tip it into the hole, on top of the gravel. With a spade, chop and stir up the gravel, so that the grout and gravel will be thoroughly mixed, and keep adding gravel and working them together till that batch of grout is all used up. Keep mixing and grouting till the hole is filled to within 4 inches of the surface, and fill up to the top of the ground with earth trodden down firm. One barrel of lime will make grout enough for four holes—costing me at the works less than a dollar a barrel. Never mix more than two parts of sand to one of lime, if you want a solid job.

The timber in the crib is as follows: Sills of hard maple, 6 feet 6 inches long, 4 by 4 inches; plates of same, 7 feet 6 inches long, 4 by 4 inches; outside posts of hemlock (flaring 6 inches), 4 by 4 inches; inside posts, hemlock, upright, 7 feet 2 inches high between shoulders, and 4 by 4 inches; inside, 2 feet 4 inches apart for passage-way; slats, 16 feet long, 5 by 1 inch, and  $\frac{3}{4}$  of an inch apart, put on horizontally; foundation posts of cedar, 6 inches diameter, 3 feet in the ground, 2 feet 6 inches out. Grout holes, 3 feet deep and 2 feet square, filled within 4 inches of the top of the ground. The posts and bents are 5 feet 4 inches apart from centre to centre. Length of crib, 32 feet, or 48 feet if wished for. Projection of eaves of roof, 12 inches.

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GREENHOUSES IN SEVERE WEATHER.—The most difficult time to maintain warmth in glass structures is during the prevalence of high winds that penetrate every crevice between the glass. In ordinary times these cracks are stopped by the congealed moisture, but a driving wind keeps them open. A little water thrown on these places at such times will usually freeze tight in a moment and prevent a great loss of warmth. The application may have to be repeated as night returns.

## OTHER SUGGESTIONS ABOUT BUILDING.

## DAMPNESS IN FOUNDATION WALLS.

THE FOLLOWING ARTICLE is copied from a work entitled "Foundations and Foundation Walls," by George T. Powell, published by Bicknell & Comstock of New-York :

In dwellings that are isolated, to avoid dampness from penetrating the basement or cellar walls that are below the line of earth, architects sometimes specify that the outside of the walls be cemented from the footings to the baseboard of framework, or base line of stone moulding, and in some instances stop the cement 4 to 6 inches below the line of earth. Then excavate the earth around the structure to the distance of 2 feet from the wall, and to a depth of 16 to 20 inches, and at an angle of 10 degrees lay one course of brick flat up to wall line, and cover with a coat of cement, as shown in fig. 345. Before this is done, it is necessary to fill in earth

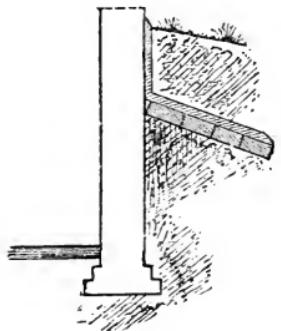


Fig. 345.

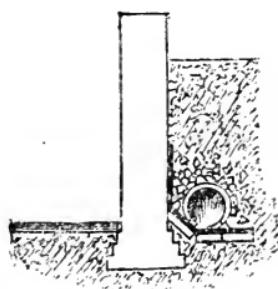


Fig. 346.

and settle it around the walls. After this is done, allow it to set perfectly before covering with earth. As the foregoing method interferes with flowers and grasses up to the line of wall, here is another method (see fig. 346).

After the wall has been built and cemented on the outside (Rosendale cement is good enough), excavate the earth on the outside to line of footings, fill with firm earth to top of footings, and grade the excavation to a proper descent to carry the water to sewer in a drain pipe laid on top of a course of bricks cemented, and on top of this put loosely broken stone, and cover the whole over with earth when it is dry. Where there is a clay bottom and much moisture, even this will not prevent dampness from arising in the cellar. To overcome this, use the method shown in fig. 346 on the outside, and that of fig. 347 on the inside.

Prepare the cellar bottom, and lay say 3 to 4 inches of sand, rolled down firm and even. On top of this put a coat of cement  $1\frac{1}{2}$  inches thick, over

the whole surface of the cellar, and lay off, around the cellar walls in the cement, flat gutters of slight descent to the sewer or waste-pipe.

There are clay soils sufficiently solid for walls of dwelling-houses. But the clay in wet seasons retains so much moisture that it does not seem to be carried away into the earth, but rises and penetrates through the cellar bottom, and keeps the cellar damp nearly all the time. This is a serious difficulty to overcome, but I have known the following method to be carried out with success: Excavate the foundations to the depth required

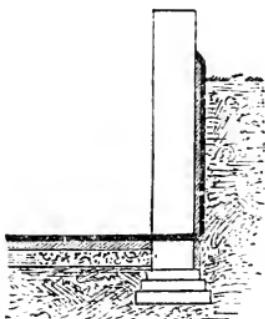


Fig. 347.

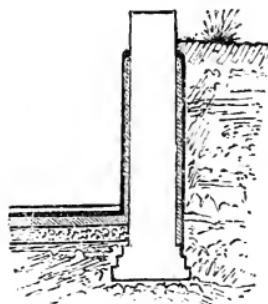


Fig. 348.

to put in the footings, and in the cellar bottom 4 to 5 inches of sand rolled hard, on top of which lay a coat of cement not less than one inch thick; and when this is as dry as possible, put a coat of asphaltum over the whole surface up to the lines of the inside walls, and through one course of brick around the whole structure, as shown in fig. 347, care being taken to cement the outside wall, and coat it with asphaltum, same as the cellar floor. This is the best course to pursue where there is no chance for a drain.

Another method to secure a dry cellar is as follows (see fig. 348): Perform such levelling to the cellar bottom as may be required; spread over this, sand to the depth of 3 to 5 inches, and roll or pack firm; on top of this cover the whole surface with one-inch thickness of cement mortar, Rosendale or American brands; carry it well against the inside of the outer walls. Coat the outside walls with cement one-half to three-quarters of an inch thick in the same manner, up to dry line. Then on top of this lay a coating of asphaltum, tar and sand, applied hot; carry the asphaltum through the wall—see fig. 347—(this should be provided for when the foundation walls are being built), and coat the outside wall to dry line with hot asphalt. When the asphalt is sufficiently dry to walk on, dip heated brick into asphalt and tar, and lay closely the whole surface with brickwork. When it is not possible to carry the asphalt through the wall to the outside, carry it up on the cement on the inside, as in fig. 348.

The best mixture of asphalt is to mix with the asphalt 10 per cent. of coal tar and 25 per cent. of sand, and use while hot, to form a cement for bedding brick for damp cellar bottoms.

## A CHEAP GREENHOUSE.

We have taken pains to examine some structures erected and in operation, and have selected one, of which we give a detailed description, and which seems to combine cheapness and efficiency. It is quite small—only 13 by 16 feet—but admitting of any degree of extension; and those who copy the plan will doubtless see various points where they may make alterations if not improvements. The entire cost of this structure was but a little over \$100. A plan is shown in fig. 349.

The outside walls are made of horizontal inch boards, nailed on posts set in the ground, and without sills. The posts being about 4 or 5 inches thick, leaves a space between the two board walls, which is filled with saw-dust. The roof consists of sash 7 feet long, the bars 2 by  $1\frac{1}{4}$  inches, set with

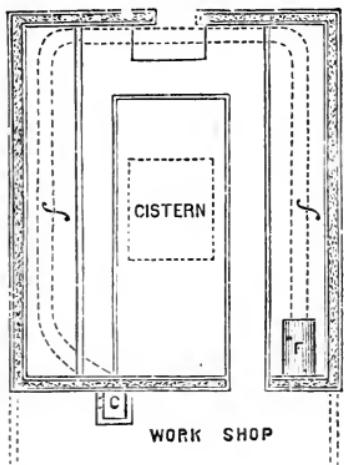


Fig. 349.—F, furnace; f f, flues; C, chimney.

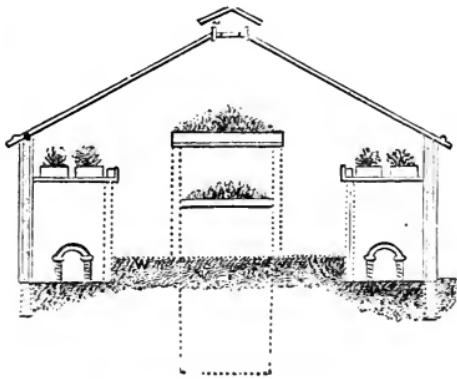


Fig. 350.

lapped panes 8 by 10 inches. The section is shown in fig. 350. Fig. 351 shows the construction of the ventilators at the peak. There are three ventilators, each 6 inches wide and 3 feet long, turning on pivots at the ends, as shown in fig. 351. Additional ventilation may be given by opening the doors at the ends. The eaves are  $4\frac{1}{2}$  feet above the ground; the peak  $3\frac{1}{2}$  feet higher.

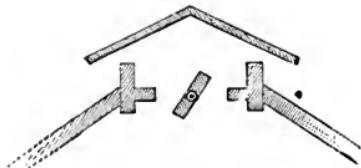


Fig. 351.—Ventilator at Peak.

The building is heated with a coal furnace, which is simply a box-stove three feet long and about one foot square, with grate bottom and ash-pit below. This furnace is set in a depression dug in the earth. Some better form than a box-stove might probably be chosen. From the furnace a horizontal brick flue extends around the interior of the building, as shown by the dotted lines in fig. 349, and beneath the shelves in the cross-section, in fig. 350. This flue is made of bricks on

edge, capped with semi-circular or semi-tubular tiles, and its interior is about seven inches wide and one foot high. It gradually rises several inches in passing around to the chimney. The cistern beneath the central shelves is shown in the cross-section, fig. 350, by the dotted lines beneath the central shelves.

The side shelves (fig. 352) are 3 feet wide, and extend the length of the building. They are about 3 feet above the walk (shown in fig. 350), and the

plants are grown in boxes placed on them. The central shelves, one above the other, are  $3\frac{1}{2}$  feet wide and  $11\frac{1}{2}$  feet long.

Fig. 352.—*Cross-Section of Side Shelf.*

The building is placed where it is well sheltered from the winds by evergreen trees, but not shaded. With a double roof like this, it would not answer in a windy place. Where a lean-to would be preferable, the same mode of construction might be employed, with one-half the interior arrangement.

We are assured by the owner that less attendance is required for this small greenhouse than for an ordinary hot-bed. It is mostly employed for starting young plants of tomatoes, cabbages, lettuce, celery, &c., the seeds of which are mostly sown in February. It is also used for keeping half-tender roots and bulbs. In summer and autumn it is employed for drying fruits of various kinds, the warmth of the sun through the glass increasing the natural heat of the air, and there is no necessity for guarding against sudden showers of rain, as when fruit is dried in open air.

#### AN ICE-HOUSE WITH A COOL ROOM.

An ice-house cannot be kept free from dampness. Its coldness naturally gathers moisture in warm weather, and whatever there is about it will always be mouldy, and have an earthy or disagreeable smell. By some very well constructed arrangement, an ice-house and cool room may be constructed so as to be effective and agreeable, but it will be at the cost of a large expenditure of ice.

An ice-house and closet may be constructed as follows: Excavate a half cellar in a perfectly dry place, from which the surface slopes (or may be made to slope) in all directions, so as to prevent any danger of moisture from want of drainage. A stone or brick wall is built around this, and laid in hydraulic cement. The floor is cemented. A frame or other building is built upon this basement to contain the ice. The size may be made to suit the circumstances. Twelve feet square will be large enough for a moderate sized family, as an ice-house of that size will hold about twenty loads or tons of ice. The ice-house may be built in such a manner as is described and illustrated in many places in the volumes of *RURAL AFFAIRS*.

The main point is the division between the ice-house and the room

below it. This must be perfectly air-tight, and a moderately good conductor of heat. The floor may be laid in the following manner:

Beams of sufficient strength are laid across, and the ends well bedded in cement. A floor of zinc sheets is then laid upon the beams, the sheets being closely nailed to the beams upon strips of rubber sheeting, to make the joints water and air tight. The beams should be dressed smoothly. The zinc sheets are bent, as shown in the illustration, fig. 353.



Fig. 353.—*Ceiling of Cool Room.*

This is for the purpose of causing the dew or moisture, which will condense upon the under side of this ceiling, to flow downward to the lower angle, where it will drip. The drip is caught in the little gutters of zinc shown in the figure, attached to the ceiling, and is carried off by a proper drain. With this water will also be carried off much of the impurity of the atmosphere, and if very little ventilation is given, there will be little condensation, and the air will be kept dry. This point must be well attended to, as the danger of excessive ventilation is very great. The beams and zinc ceiling should be painted with white paint—lead and oil.

Above the zinc ceiling, a thin layer of dry, fresh sawdust should be laid smoothly, and a floor of matched pine boards should be laid upon that, and thoroughly coated with melted pitch. This floor should slope a little to one corner, so as to draw the waste water from the ice there, and an S trap drain should be laid from that to carry off the water into

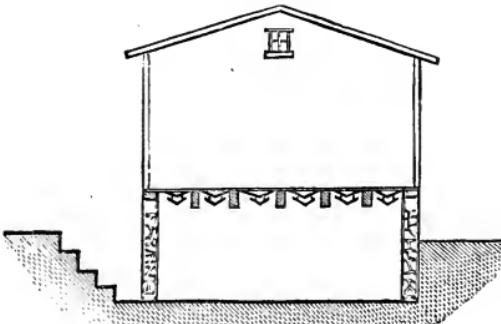


Fig. 354.—*Ice-House and Cool Room.*

the drain before mentioned. The usual layer of sawdust is laid upon this floor to prevent too rapid conveyance of heat from below to the ice above. Small double windows should be used in the cool chamber below, to prevent access of heat from the outside, and they should be fitted air-tight. Ventilation should be provided for by means of a wooden pipe with a slide, by which the opening can be regulated. By carefully regulating the ventilation, the air may be kept dry and sweet; but if too much outside air is given, the chamber will become damp and mouldy. A section of the whole building is given in fig. 354.

## A CONVENIENT PIGGERY.

The following article was written for the **COUNTRY GENTLEMAN** by an Orange County, N. Y., farmer:

The size of the building is 26 by 40 feet, and the general arrangements can be seen by the accompanying plan. The building is two stories high; the front posts are 16 feet high; rear posts, 14 feet, and it is covered with a gravel roof. The first floor (fig. 355) is divided into five pens, 8 by 14 feet,

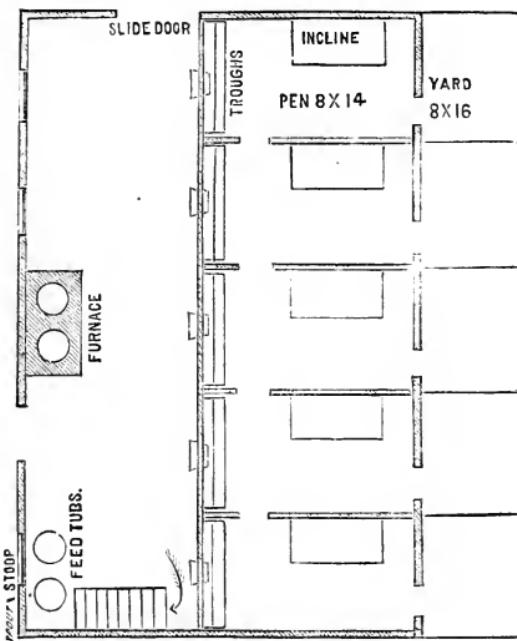


Fig. 355.—First Story of Piggery.

6 feet high, to be used for feeding-rooms. There is a killing-room under the whole building, with floor laid with swelled brick in cement, having a gradual fall from the sides to the centre of the room, and thence to the outer door to carry off all waste water. The furnace and feed troughs are of iron; the troughs are 1 by  $7\frac{1}{2}$  feet. The spouts are of iron also, bolted to the troughs at the lower end, and are 2 feet long, 16 inches wide and 3 inches deep. The feeding-room floor has a fall of 4 inches in 14 feet, toward the back sill, discharging under the sill. The sill stands on iron points 4 inches high.

The second story (fig. 356) contains five sleeping rooms, reached by inclined walks from the feeding-rooms below, and are floored with  $1\frac{1}{2}$ -inch oak plank, laid on 6-by-6-inch chestnut beams. The store-room and platform are floored with  $1\frac{1}{2}$ -inch spruce plank, matched, with feed-bin and

spout of same material, to carry feed to the milk-tubs below, as may be seen by the plans. Each sleeping-room is well lighted, and the height of this story, with windows open in warm weather, affords ample ventilation, keeping the animals in better condition than would be the case in a dark, badly ventilated pen.

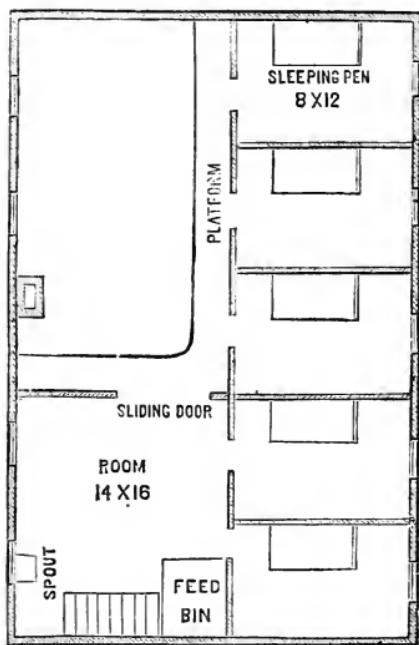


Fig. 356.—Second Story.

in the diagram of the second floor (fig. 356) is used for slaughtering and hoisting cattle as well as swine. I am wintering 20 hogs, and they are doing well. I find no difficulty in getting my hogs to occupy the sleeping-rooms.

#### PLAN OF A CATTLE BARN.

I enclose you a plan (fig. 357) of a cattle barn which I think will recommend itself to farmers who want a cheap and substantial barn. It is built without any sills, the upright posts being simply set on small rock pillars. *G G G* are grain bins; *F*, feed room; *T*, turn table; *R R*, track for feed car; *S S*, stables, 11 by 33 feet.

It will be seen by fig. 358 that by bracing the intermediate spans of the frame with one-inch iron rods, and with a plank nailed on for a collar

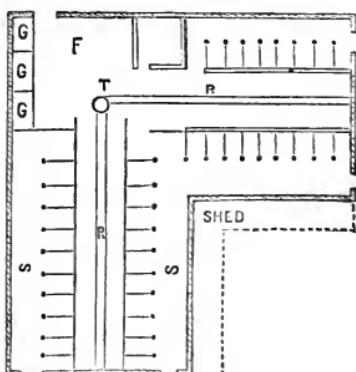


Fig. 357.—Plan of Cattle Barn.

beam between the rafters, there will be no cross-girders in the hay-mow to be in the way of handling hay, either by hand or hay-fork. Fig. 359

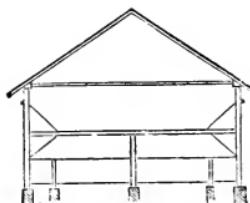
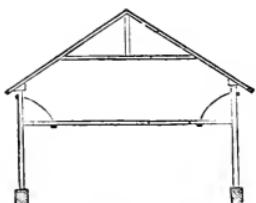


Fig. 358.—*Intermediate Spans with Braces.* Fig. 359.—*End of Frame; Posts 14 feet.* shows the frame at one end. There is no use of having a large covered space to drive a wagon in to unload, when it can be done as well from without.—*Virginia correspondent of Country Gentleman.*

## THE REARING AND KEEPING OF RABBITS.

BY HENRY STEWART, BERGEN COUNTY, N. J.

RABBITS MAY BE REARED as cheaply as fowls, and the flesh is equally desirable as food; they are also equally entertaining as a source of pleasure for fanciers, both old and young, but more especially for young people. The possession of a pair, or a few pairs, of rabbits, and the entertainment to be derived from the care of them, may very easily become the foundation of a tie which may firmly bind a youth to the family homestead, and turn him into an ardent lover of his fathers' rural pursuits. A love of animals is one of the indispensable qualifications of a successful stock breeder, and many of those men who have become prominent in this way, and have given a controlling direction to some remarkably successful lines of breeding, have begun their career as breeders of such pet animals as rabbits. From rabbits they have advanced to Short-Horns, and have made their mark in every step of their career. It is therefore for the boys more especially, and not for the grown-up fancier, that these lines are written.

In beginning to keep rabbits, one should avoid the mistake of attempting to rear the rarer and more expensive, as well as the less hardy varieties. With a costly pair of lop-ears one will want a fancy hutch, and will almost invariably kill his pets with kindness, and when the almost unavoidable failure comes, the disappointment will be the keener. The common grey or black and white rabbits, can be procured cheaply, and a hutch made of a few boards and laths will be a cheap and yet sufficient lodging. When these can be kept successfully, all the difficulties conquered, and a good stock of experience has

been gained, then, but not before, the stock may be increased, and the more desirable varieties kept.

In selecting rabbits, those about six months old should be procured, and kept for three or four months before they are paired. Young rabbits are to be known by the short claws, which do not project beyond the fur of the foot, and by the small teeth. A healthy animal is known by the clearness and the pure white color of the eye. The appearance of a yellow tinge to the white portion, with a swollen or pot belly, are signs of bilious disorder and deranged liver, which is the most frequent and dreaded disease. This is caused by over-feeding on soft, wet food. In good health the droppings are in round balls, having no disagreeable odor when fresh, and the animal is lively and sprightly. Three does and one buck are a safe number to begin with, although six or eight does may be mated with a single buck.

The essentials in rearing and keeping rabbits are warmth, dryness, good food in moderation, and perfect cleanliness of the lodging. The following rules for the government of a flock, small or large, are to be observed:

Maintain the greatest quiet in every particular.

Have no dogs about the pens.

Never disturb the rabbits at mid-day.

Keep regular hours of feeding and times for cleaning.

Never permit any offensive odor in the pens.

Watch carefully for anything wrong, and look to it at once, and separate any sick animal from the others.

Examine often the noses; eyes; ears, inside and out, and the feet, for anything wrong.

Ventilate the hutches and pens thoroughly.

Keep the temperature equal and comfortable.

Keep nursing does always supplied with food.

A doe that has reared a large litter should not be bred again so soon; frequent litters make weak stock.

Never handle the young rabbits.

Permit no mice or rats about the pens.

Use little or no green food when getting the rabbits into condition.

Never feed green food when it is wet.

Avoid exposure to damp and foggy weather.

Study the nature and character of the rabbits, and know the reason for every point in their management.

#### VARIETIES OF RABBITS.

We have no wild rabbits in America. Our rabbit is a hare; all our domesticated varieties are therefore imported. The most hardy of all these is the common black and white or Dutch rabbit (fig. 360). This is the smallest variety, but is preferred for table use to some larger kinds,

on account of the quality of its flesh. Although usually black and white, yet its principal color is sometimes grey, slate color, yellowish or brindle,

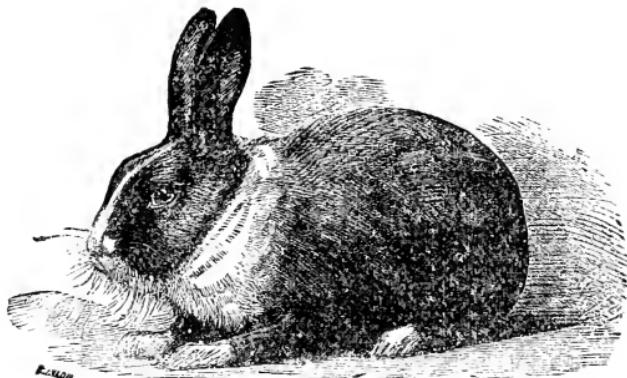


Fig. 360.—*Black and White Rabbit.*

mixed with white. The white is in a ring around the neck, a streak up the face, and on the tip of each foot. These markings are considered as the standard, but the colors vary from nearly all white to nearly all blue, yellowish or tortoise shell, or brindled, or patches of these shades. The does of this variety are excellent mothers, and will foster and rear young ones not their own without the least objection, and being good feeders, can take care of a large litter without any trouble. They produce from five to seven young at a litter, and when full grown will weigh from 3 to 5 pounds.

The lop-eared rabbit (fig. 361) is the most popular of all varieties; some perfect specimens bring enormous prices, as much as \$100 having

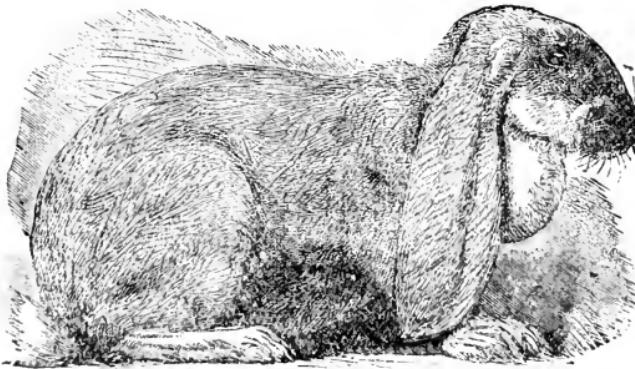


Fig. 361.—*Lop-eared Rabbit.*

occasionally been paid by English fanciers. It is remarkable for the length of its ear, which sometimes reaches 21 or 22 inches. In color this variety differs greatly; in fact it may be said to be of all colors, for it is

grey and white, black and white, blue and white, yellow and white, grey, fawn, black, white, and mixtures and shades of these colors. Tortoise shell is a favorite and somewhat rare color. The lop-eared is a large rabbit, weighing when in good condition 10 to 12 pounds, or even more, and requires good feeding. Sweet, fresh hay, oats, rutabagas, scalded bran, peas and crushed corn form the best kinds of food. They also require a good deal of warmth, and when kept in a convenient court a small stove will be indispensable in the winter to maintain them in the best condition. The ears are enlarged by frequent manipulation with the fingers and thumbs, and a fancier who can, by pulling and stretching the ears, and keeping the animals in excessively warm pens, add so much as half an inch in length and width to these appendages, will consider himself as unusually fortunate.

The silver-grey rabbit (fig. 362) is of Asiatic origin, and said to have come from Siam. It is certain that these animals are very largely kept

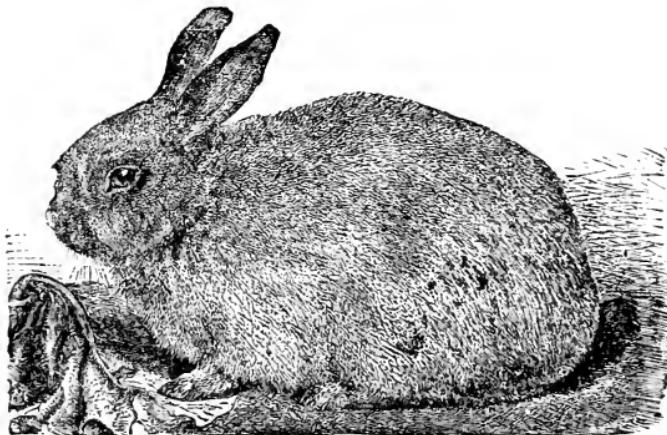


Fig. 362.—*Silver-grey Rabbit.*

in that part of Asia, where they are used in the pagan ceremonies as sacrifices to propitiate the deities who are supposed to look after the harvests, and induce them to make the crops as prolific as rabbits.

This variety is large and unusually heavy, reaching from 6 to 9 pounds, and is more solid and plump than any other rabbit of its size. The young are black at first, but as they grow older, white hairs appear mingled with the black until, at maturity, the solid silver-grey covers the whole body, except at the tip of the nose. Thousands of this kind of rabbit are reared in a wild state in the open ground in England for market, and for their skins. The flesh is very well flavored, and the best colored skins are in demand for the kind of fur known as "chinchilla," or when dyed, for other more pretentious and costly kinds. It is the best variety for profit, and is hardy and prolific, but shy and not very docile.

The Belgian hare-rabbit (fig. 363) is the largest variety known; it reaches a weight of 10 or 12 pounds when fattened, and is kept chiefly by French

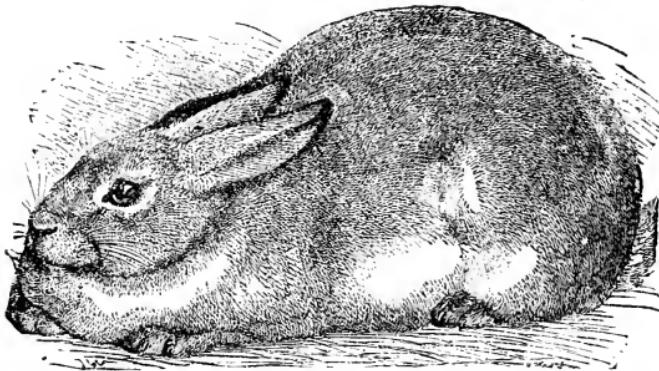


Fig. 363.—Belgian Hare-Rabbit.

fanciers. A few fine specimens of this variety are sometimes found on board of the French and German ships in New-York harbor, upon which they are kept as pets by the sailors. They are hardy, and may be kept in a dry locality out of doors in a half wild state with great success and very cheaply, if furnished with warm winter quarters. They are easily kept, are excellent feeders, are docile and not pugnacious, although timid, and are alarmed even by a mouse. In color it is of a solid reddish grey, and its fur is valued by the furriers. It is hardy, and will thrive in a lower temperature than either of the two varieties last mentioned.

The Himalayan or Chinese rabbit (fig. 364) is a beautiful little animal, being mostly pure white, excepting on the ears, the tip of the nose and

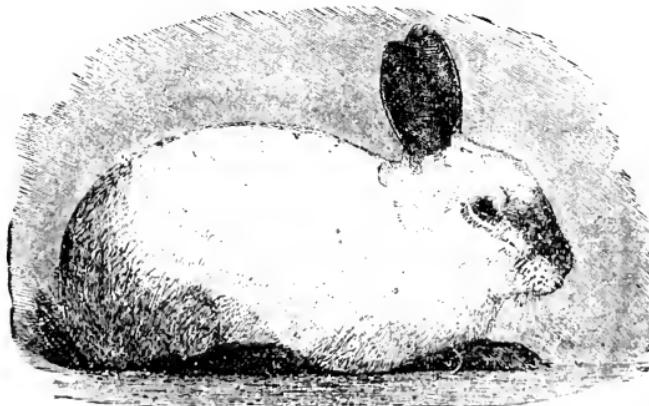


Fig. 364.—Himalayan Rabbit.

the feet, which are black. The young at first are wholly pure white, and take on the black points only when five months old. They weigh about

five pounds when fully grown and fat. A warm pen must be provided, as they are tender, and cannot stand severe cold, but they are not difficult to rear if precautions are taken to protect them from sudden changes, and provide them with warm pens and nests.

There are several other varieties known to fanciers. The so-called Patagonian, a cream-colored rabbit from Savoy, is very large, some castrated males reaching 12 pounds or over when ready for market. The Angora, like the goat of the same nativity, has long, silky fur, which has to be combed to keep it in good order; the color is most often pure white, but mixed and self colors of all shades of black, grey, fawn and blue are occasionally found, and by crossing, the mixture is still further varied.

The common rabbit, which is of all sizes, shapes and colors, is the most frequently met with. It is a cross breed in which the most common varieties have been mingled until it has no distinctive mark. But although common in every respect, it is far from useless, because it is the best kind to begin with, and a pair may often be procured for such a moderate sum as to be within the means of almost any country boy who has the most meagre supply of pocket money.

#### THE MANAGEMENT OF RABBITS

Varies with the manner in which they are kept. The most hardy kinds may be kept out of doors the whole year, and indeed any variety may be

kept in open courts in mild weather, if warm shelter is provided during storms. The court may be an oblong yard, and as rabbits are burrowing animals, it should be paved with cobble stones or covered with a floor. The pens are arranged around the sides in the manner shown at fig. 365. A range of pens for does (*C C*) is made on two sides, the pens for the bucks, *D*, are at the end. The door is at *B*, and at *A* is a mound of earth over some rocks so arranged as to make cool burrows for the rabbits during the hot weather. This earth will be serviceable in cleaning the feet and fur, and absorbing all the odors coming from the animals. At *Z* is the feed trough, covered with wires, to prevent the rabbits from getting into it and wasting the food.

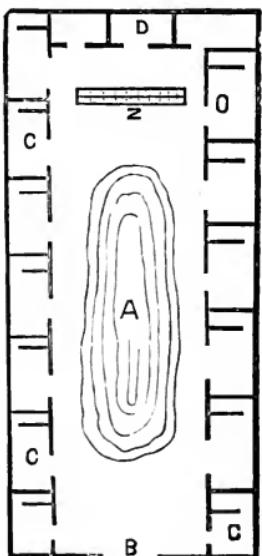


Fig. 365.—Rabbit Yard.

An excellent court may be made of a sandy hillside having a southern exposure, in a piece of open woods or shrubbery surrounded by a tight board fence, and having a covered range of pens in the centre. The hardy kinds might be kept here in a half wild condition, and be permitted to burrow in the bank, as is natural to them.

The breeding pens have a retired corner partitioned off, where the does may make their nests, and the pens should have hinged covers, that may

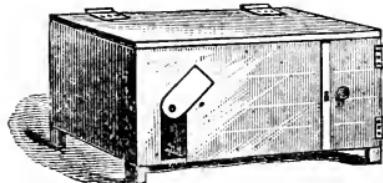


Fig. 366.—Rabbit Pen.

apartment, hung upon hinges and fastened with a button. The partition is made to slide in or out, and a small knob is screwed on the edge to hold it by. The pen should be about 3 feet long and 2 feet wide and high. Shoe boxes will do very well for small rabbits, but larger boxes are required for the larger kinds.

For an indoor court a stable floor or stall may be used. The pens are then ranged one above the other—the first ranged upon 9-inch posts, and the others with posts 4 inches long.

The floors are kept littered with chaff or sawdust, or dry sand, and if the rabbits are fed upon dry food, they will make very little dampness. A false floor of laths nailed upon half-inch strips makes a good dry floor. Double pens, or rather two tiers of double pens, for rabbits not breeding, are shown in fig. 367. A breeding pen provided with a false floor and a wire door is shown in fig. 368. The door of the nest apartment is not shown so that the slide partition may be seen. The last two

are suitable for indoor use. Out-door pens should be tightly roofed, to shed rain, and the water should be carried off.

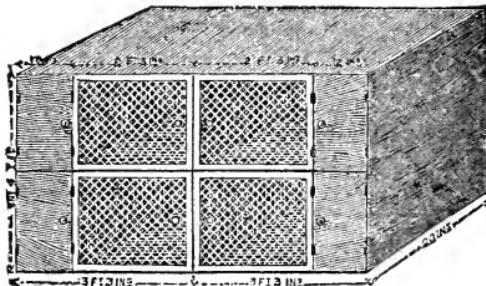


Fig. 367.—Double Pen.

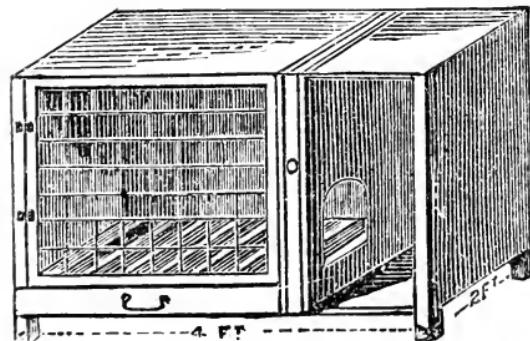


Fig. 368.—Breeding Pen.

use. Out-door pens should be tightly roofed, to shed rain, and the water should be carried off.

## FEEDING AND BREEDING.

Soft, short oat straw or chaff, or pine sawdust is the best bed. Clean oat straw will be eaten very readily, and the refuse will serve for litter. The feed should consist of some sliced rutabaga, carrot or cabbage in the morning; whole oats or crushed corn will make the evening feed for full grown animals. Young rabbits require crushed oats and bran, or ground oats and bran as usually used for horse feed. Sweet, fine meadow hay, dried lawn clippings, or clover, may also be provided for them. Peas or corn steeped in water and the water poured off are good food for fattening, and two tablespoonfuls a day will be sufficient for a full grown rabbit. In cold weather a supper of thick corn-meal mush, given warm, but not hot, will be beneficial; barley and cut potatoes boiled dry and mixed with corn meal or linseed meal, may be given for a change. Drained, fresh brewers' grains are also healthful food given at intervals. The feed should be given three times a day, and only so much as will be eaten clean. A pinch of sulphur and salt should be given once a week. A bed of chicory may be grown for them, and dandelions are also useful. Very little water is needed, but if some is offered once a week, a sip or two may be taken. A little warm, sweet milk is very acceptable to them, but the dish should be removed as soon as they have taken what they wish. For feeding rabbits in pens indoors, the small flower-pot saucers make very good dishes, not being easily upset, and are easy to clean. Hay may be given on the floor or in small racks tacked to the sides of the pens.

Rabbits should be paired first in February or March. The does should not be bred until five or six months old, and four litters in a year are as much as should be raised. The buck should not be left with the doe at coupling for more than a few minutes. When the doe is about to litter, she will begin to make a nest by carrying hay and straw to a corner of the pen. When this is seen, the pen should be at once thoroughly cleaned and disinfected with a little chloride of lime or diluted carbolic acid, and then sprinkled with fine sawdust. The dates of littering may be known by adding thirty days to the record of coupling. The day before littering a dish of fresh water should be given to the doe, and this will prevent the killing of the young, which is said to be caused by the intense thirst experienced at this time.

No dogs or strangers should be permitted near the pens, and every movement should be so quiet as not to startle the doe, which is now very excitable. The young rabbits should never be touched. If any die, the doe will bring them to the door of the pen. Nursing does should have warm milk and bread given liberally morning and evening for the first three weeks; after that, carrots cut into slices, and thick corn mush, and soaked—but drained—peas may be given. After fifteen days the young rabbits may be seen peeping out of the nest, and in three weeks should be removed to a clean, warm pen. A spare pen or two should always be

kept in readiness for this purpose. A few Dutch does will be found useful in large collections to foster surplus young ones, and to save the litters of weak does. When fine specimens are desired, all the young but two may be taken from the mother. When a month old the young will leave the nest and will begin to feed with the dam. After two to four weeks more they may be removed, one at a time, so as to dry up the milk gradually. A little salt may be given to help dry the milk. After they are four months old, the young rabbits will begin to quarrel and fight, and should be separated, the bucks being put into separate pens, and the does left four or six together, until ready for breeding.

At eight weeks old the young rabbits moult, and then require a little extra care. Some crushed oats, fresh carrots, and plenty of fresh, but not cold, air should be given at this time. Young growing rabbits will eat constantly, and should be provided for liberally. By carefully observing them, their habits will soon be learned, and all their necessities soon discovered. Prompt attention should then be given.

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## PROFITABLE ORCHARDING.

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WE FURNISH THE READERS of RURAL AFFAIRS with an account, from personal examination in the autumn of 1880, of a number of apple, pear and peach orchards, which have proved profitable to the owners, and in some instances eminently so. Citing these successful instances may be objected to as furnishing rare exceptional cases, and as not affording a fair statement of the average results from orchards throughout the country. It is true that they are rare instances; but the skill and care with which they were managed are equally rare. In all our examinations we have not seen an orchard of good bearing age, in a favorable locality, with good soil, well selected varieties, and managed with skill in culture, care in gathering and packing, and with intelligence in marketing, that did not give its owner very profitable returns. Most of the orchards throughout the country receive comparatively little attention, and they are often planted in places badly adapted to the best success. From such orchards favorable reports are not to be expected.

### MR. CHAPIN'S ORCHARD.

We had occasion to notice in former years the apple orchard of OLIVER C. CHAPIN of Ontario county, N. Y., and on account of its extent, much interest has been felt by the public to know the degree of success which has attended it. During a recent visit at Mr. Chapin's place, we obtained information as to its profits up to the present date, Mr. C.

and his son, Harry Chapin, affording us all the facilities required for a thorough examination of the orchard, as well as the figures from their note books.

The planting of the trees was begun in 1851, and was continued for eleven years, their present age ranging from 18 to 29 years, and the



Fig. 369.—*A Small Portion of Mr. Chapin's Orchard.*

majority being about 22 years old. There are nearly 6,000 trees, covering 125 acres. Most of these are Baldwins. Besides these there are about 10 acres of an old orchard, the whole covering more than one-half of the 240 acres of the farm. The trees are planted 30 feet apart, and they have now grown so that the branches in opposite rows nearly meet each other.

This orchard, although in one entire piece, is divided into three or four portions by partition fences, for the sake of convenience in cultivation and for pasturage.

For the first ten years or more the ground was cultivated without cropping—that is, it was summer-fallowed. Crops could have been taken if



Fig. 370.—*View of a part of Mr. Chapin's Orchard seen a Mile Distant.*

there had been manure to meet this increased demand. Of late years the treatment has been seeding to clover, feeding this down by sheep,

plowing it under in three or four years, and top-dressing with manure as far as practicable. The ripening of some of the seed under the tread of the sheep keeps the clover crop growing for some years. This treatment has effected a visible improvement in the appearance of the trees of late years, and they have become more thrifty.

The handsome and symmetrical form of the trees, and their regularity



Fig. 371.—*A Portion of one of the Rows.*

in the rows may be imperfectly inferred from the annexed sketch of a portion of a row, fig. 371.

This orchard was long in coming into bearing, and in its earlier years was sometimes cited as an example of unprofitable orcharding, even with good care. We were unable to obtain an accurate statement of its product before the year 1873. That year it bore 3,000 barrels, and being the odd, or scarce year, the fruit brought good prices, 2,000 barrels being sent to Baltimore in autumn to be disposed of during winter. These sold at wholesale at \$3.50 per barrel, and when freight, commission and storage were taken out, left a net price of \$2.65 per barrel. Those sold at home brought a slightly higher net price. The whole sales amounted to \$7,000. In the next two years the crop was small, which continuing thus two years in succession, threw the next abundant crop into the even year of 1876. This year there were about 3,000 barrels, which, by shipping largely to Baltimore, or keeping till spring, brought sufficiently high prices to make the aggregate receipts \$6,000. Singularly enough, the two next years gave quite small crops—only 50 barrels being obtained in 1877, which brought \$100, and only 350 in 1878, selling for a few hundred dollars. These two barren years changed again the productive season from the even to the odd year, and in 1879 the orchard bore 10,000 barrels, which sold for *seventeen thousand dollars*.

The crop is small this year, (1880) and the hope is entertained that the next—the scarce year—will afford another abundant crop. No cause has

been discovered for this change, first from an odd to an even year, and then back again to the odd year. It will be observed that the crop of 1879 brought at the rate of \$135 per acre for the whole orchard.

No accurate estimate has been made of the comparative profits of the orchard so far, and the profits which would have been derived from the same land had it been kept in farm crops and no orchard planted; but Harry Chapin gave it as his opinion that the farm crops would have sold for the highest sum—the prospective value of the orchard being what they are looking for.

The grazing of the sheep under the trees has been of great value, not only by keeping the grass down and top-dressing the land with their droppings, but more especially by destroying the codling moth, the crop being fair and nearly free from this insect, and selling at a better price as a consequence. In an adjoining orchard belonging to a neighbor, the trees of which were set out at the same time and are now about as large, the crop is nearly spoiled by the codling moth, no sheep having the run of the orchard. The sheep have shown no disposition to gnaw the bark of the trees, except that the rams have sometimes attacked them. They have, therefore, applied lime-wash in which some bitter drugs had been mixed, but Mr. Woodward's wash is preferred, a statement of the ingredients of which is given on a subsequent page of this article.

Some years ago the canker worm obtained an entrance and made formidable inroads. It had infested about two thousand of the trees. The remedy of pine tar belts was employed with partial success, the tar being spread about 6 inches wide on the bark. Cold winters soon hardened the tar, and the canker worms went freely over it; warm winters kept it soft. It was necessary to renew it every few days. A neighbor applied two of these tar bands to his trees, but even these did not deter the insects, which crawled into and were held fast by the tar till they had successfully bridged the belt. Paris green was subsequently resorted to, and proved entirely successful, and the canker worm is now driven from all that neighborhood. The mode of application is to fill with water and Paris green one of the wagon tanks used by steam threshers, and to shower the trees with a forcing pump. A pound of Paris green will go over an acre, and fifteen acres may be treated in a day. The small quantity which has fallen on the grass has never injured the animals in the orchard, but caution is obviously required in such cases. Harry Chapin thinks it would be profitable to shower the orchard every year, to clear out insects generally. Being done early in the season, or as soon as the leaves appear, no harm can come to the fruit.

Mr. Chapin derives much advantage from the use of a large fruit cellar, which will hold 4,000 barrels of fruit, and enables him to obtain good prices in the spring when the market is poor in autumn. It is a two-story basement under a large barn, 40 by 60 feet. The lower

cellar is 10 feet high, the upper 8 feet. The walls of masonry are 3 feet thick below and  $2\frac{1}{2}$  feet above, and lined inside with boards and several inches of sawdust. The board floor above is covered with four feet of straw.

Mr. Chapin has a high appreciation of the value of clover as a fertilizer, and stated that on a piece of naturally good land, which had been so much exhausted by a previous occupant that it yielded only 12 bushels of wheat per acre, he raised a good crop of clover by plastering, turned it under, and the next crop of wheat was 25 bushels per acre. But the clover insect is destroying its value. After long experience in orchard management, he would recommend to cultivate the trees the first 8 or 10 years, and plant intermediate crops only in case he could secure plenty of manure; he would then seed to clover, turn in sheep, top-dress with manure, if to be had, and turn the clover under at intervals of a few years. He has found no advantage from the use of superphosphate. Mr. C. remarked to us that it had taken a long life-time of experience to acquire his personal knowledge on the subject. He has certainly given the public much valuable instruction by his successful example, and he merits the grateful appreciation of those who are to be benefited by his labors.

Ontario county, N. Y., and especially the neighborhood of East Bloomfield, is well adapted to the growth of apple orchards, and several large and fine ones were seen in the course of our rides. One of the best of these belongs to James T. Sheffield, covers 16 acres, and the trees were loaded with crops of fine fruit. Isaiah Norton has 40 acres, in excellent condition. Elisha Steele has an admirably managed 5-acre orchard, the trees

about 20 years old, which bore 400 barrels in 1879, selling for \$800. In 1878 he had 500 barrels, but that being an abundant year, they sold lower. He top-dresses with manure, seeds down and turns in sheep to destroy the codling worm. J. E. & H. Steele, brothers, have over 30 acres of orchard. J. W. Hopson owns the old original Heman Chapin orchard, in which the Northern Spy originated, and Norton's Melon was grown there after being brought from the East. The tree of Northern Spy died some years ago, but the Early Joe was loaded with fine fruit, and a portion of the Melon was growing and bearing. The trunks of each of these measured 15 inches in diameter, but some other

larger growers measured 27 inches. More than half the old trees remain, some growing and bearing with vigor, the age of the trees from seed being 90 years. The annexed cut (fig. 372) represents one of these old trees, a few of which, however, have more vigor. Oliver Chapin, the



Fig. 372—*A Ninety-Year-Old Apple Tree.*

uncle of O. C. Chapin, came to this county in 1790, and immediately commenced the growth and dissemination of nursery trees, which he continued for nearly thirty years, and to him this region is indebted for many of its old and excellent orchards.

### GENESEE COUNTY ORCHARDS.

The northern portion of Genesee county, N. Y., and especially the neighborhood of Batavia, is well known for its excellent and profitable apple and pear orchards. Through the kindness of Nelson Bogue of that place, we were enabled to examine some of the best of these orchards.



Fig. 373.—*Young Loaded Plum Tree.*

of one of these trees. These trees, as a matter of course, had received the best cultivation. Mr. Bogue finds rye, densely sown early in autumn, one of the best fertilizers for his land, when plowed under the following spring, after growing a foot high.

In the town of Oakfield we found several well managed and profitable orchards of dwarf pears. Lorin Rathbun had a 10-acre pear orchard, chiefly of the Duchesse, the trees being 16 years old. They are set 12 feet apart, and the outer branches nearly touch each other. A few years since this orchard bore 1,205 barrels of fine pears, or over a barrel on an average for each tree. They were sold at \$5 per barrel, giving \$6,000 for the crop, or \$600 per acre for the entire orchard. This was his most profitable return, although in other years it has done well. The best paying crop on a small area was several years before, from an older orchard of a little less than one-fourth of an acre, which produced 19 barrels, and which sold for \$18 per barrel, making the sum of \$340, or at the rate of \$1,360 per acre.

In the same neighborhood Julius Reed has a fine 400-acre farm, with some excellent orchards. From one-third of an acre of dwarf pear trees—all Duchesse, set in 1858—he has sold the fruit in the different years since bearing commenced for \$2,340. Mr. Reed had a fine apple orchard, from 20 to 24 years old. The trees were planted 24 feet apart, with the

intention of thinning them when the tops began to touch each other. This thinning he had already begun, in the manner shown in the accompanying diagram, the first, or fig. 374, showing the position, by stars, of



Fig. 374.—*Close Planted Orchard.*

the trees before thinning, and fig. 375 showing by dots the trees that have been removed. This operation left the trees running diagonally across the orchard, 34 feet apart. Mr. Reed said that the improvement already effected indicated that in a few years after the thinning the fruit would be both more abundant and better in quality.

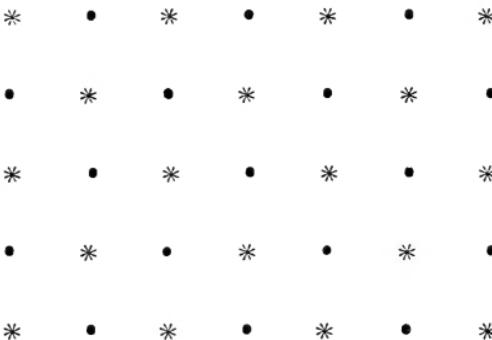


Fig. 375.—*Orchard Thinned Out.*

Eli Taylor of the town of Elba, occupies 420 acres of good farm land, and he has an admirable dwarf pear orchard of  $2\frac{3}{4}$  acres. The net profits of the pear trees have, on an average of years, been equal to the net profits of all the farm besides, and in some years have exceeded those of the farm. There are over 1,000 trees, planted in 1865, 10 feet apart, and their average product had for several years averaged about \$1,000 a year.

Mr. Taylor now plants his trees  $12\frac{1}{2}$  feet apart. He manures them moderately every year, and cultivates the ground. The trees were about

10 feet high, are all Duchesse, and were bending under their heavy crops (fig. 376.) He furnished us with the following statement of his receipts for the past nine years, which show the continuous profits. The trees

were set in 1865, and in the year 1871 they bore

21 barrels, sold at \$10 per bbl., or for	\$210
In 1872, 175 barrels sold at \$5.50,.....	962
1873, 230 do. do. 5.50,.....	1,265
1874, 210 do. do. 6.00,.....	1,260
1275, 330 do. do. 5.50,.....	1,815
1876, (no crop.)	
1877, 460 barrels, do. 4.00,.....	1,840
1878, (no crop.)	
1879, 160 barrels, do. 4.50,.....	720
	\$8,072

Crop of 1880 estimated at 400 barrels.

Mr. Charles Cook, in the town of Byron, has an excellent 50-acre apple orchard, containing 2,400 trees of the leading standard winter varieties.

Fig. 376.—*Dwarf Duchesse in Fruit.* They were 14 to 19 years old in 1880, and were set 20 by 40 feet apart, with the intention of removing every alternate tree when they become so large as to crowd each other, making the distance 40 feet each way. Hogs have the range of the older portion, which is one of the finest orchards we have examined. Although most of this orchard is comparatively young, about \$2,000 worth of fruit has been sold from it in one year. Besides this large apple orchard—the most extensive in this part of the country—Mr. Cook has large plantations of peaches and blackberries.

The experience of orchardists through this region of country gives the strongest preference to the Baldwin among apples for profit, and to the Duchesse among pears. The large size of this pear makes it profitable in market, and its hardiness and resistance to the blight add greatly to its value. Where pear orchards were planted many years ago of different leading varieties, it is common to find that all have disappeared by disease or feebleness except the Duchesse; and fine orchards of this sort, covering several acres, with scarcely a vacancy, the trees from 10 to 20 years in bearing, show its general reliability. A single variety, however, ripening nearly at a fixed period, can never give a full supply for the market through an entire season, and experiments should not be relinquished to obtain a succession, at least through autumn and winter, of equally reliable sorts.

#### ORCHARDS IN NIAGARA COUNTY.

The county of Niagara, N. Y., has long been known for its successful orchards. Protected on the north by the open waters of Lake Ontario, and with the western winds of winter softened by their long sweep over Lake Erie, the climate is unusually favorable, while the soil is well fitted



for the growth of fruit trees. In 1875 the total apple crop amounted to about 400,000 barrels of selected winter apples, selling at from \$2 to \$3.50 per barrel. The entire fruit crop of the county was valued at \$1,147,000. The crop of 1877, two years later, was much smaller than in the preceding year, but amounted to over \$390,000. In 1879 the apple crop amounted to more than 400,000 barrels of all sorts, and the entire fruit crop, exclusive of that used for home consumption, was estimated at \$665,000. This success has not been owing wholly to natural advantages; the best orchards have been subjected to careful cultivation, and have not been neglected and grown up with grass, as generally occurs in some other counties.

Through the efficient assistance of J. S. Woodward of Lockport, we were enabled to visit a number of the best orchards in this county. The northern portion is conspicuous for its large peach and apple orchards. The peach crop was very heavy that year, and the trees were seen bending under their rich loads, largely of the brilliant and showy Crawford. At the time of our visit (1880) a throng of wagons, loaded with peaches in baskets, was continually pouring into Lockport for shipment by railway, and cars could not be found in sufficient numbers to convey them to Buffalo and other markets. The finest could be bought in Lockport for 25 cents per basket. Many orchardists were bewildered with the vastness of the task before them, in gathering and conveying their unprecedented crops to market. Most unfortunately a large share of the trees showed unmistakable signs of the yellows, and in some neighborhoods owners were looking for their entire destruction in a year or two. This disease made its first appearance five years before. It does not appear to have been introduced by contagion, but, as in other counties, to have made its appearance at long distances from other diseased trees. Orchardists who promptly removed infected trees did not succeed in checking it.

The apple orchards of this county continue to be eminently successful. A brief account of some that were visited will doubtless be read with interest.

J. S. WOODWARD, who resides in Lockport, has a 200-acre farm four miles out. His 30-acre apple orchard was set out in 1866. Two hundred sheep and 40 swine destroy all the codling worms that fall, and very few of these insects are found in the fruit. Sheep have proved more efficient than swine in the greater vigilance with which they seize every dropping apple. To prevent the sheep from eating the bark of the trees he washes the trunks with a mixture of lime-wash, common and whale oil soap and sheep dung. These animals are kept in the orchard till September. They eat the fruit and branches within their reach, and in some years have thus devoured 200 or 300 bushels, but the benefit resulting from keeping them so late overbalances any loss. In all cases the sheep must be well fed in troughs with grain, in addition to the grass and fallen fruit. He

thinks the hogs cleared out all the eanker worms at the commencement of the entrance of these insects into the orchard. The trees are mostly Baldwins, with Rhode-Island Greening and Roxbury Russet. In 1879 the crop amounted to 2,600 barrels, which sold for over \$5,000.



Fig. 377.—*Mr. Woodward's Orchard of Duchesse Pears.*

A young orchard of dwarf Duchesse pears (fig. 377) is one of the finest we have met with. It consists of 2,000 trees, 12 feet apart, and occupying four or five acres. The ground is kept perfectly clean by cultivation. The trees were set out in 1876. In 1879 it bore 75 barrels of fruit, which, at \$4.50 per barrel, sold for \$337. In 1880 the crop on the trees was estimated at 200 barrels.

Mr. Woodward's magnificent peach orchard of 20 acres was estimated in 1880 as good for 10,000 baskets of fruit. It is mostly Early Crawford, and the trees were loaded with showy peaches, but most of them were ruined with the yellows. On its first approach the diseased trees were removed, but since then it appears to have come down alike on the whole orchard. Mr. W. remarked that "the glory of the peach orchards of the county has become a thing of the past." Young trees which have never borne have been alike affected.

Special attention is given by Mr. Woodward to the manufacture of manure, and about 1,600 loads are annually made on the farm. One-third, or 500 to 600 loads, is applied to the fruit trees. He buys animals, purchasing oil-meal and other feed, as he finds necessary, and sells them in market. Every load of manure he makes, instead of costing him anything, actually nets him a dollar each. We saw nine acres of luxuriant mangel wurtzels for feeding his animals, which he estimated at 1,600 bushels per acre. His barns consist of a combined building 76 by 108 feet, a horse barn 30 by 40 feet, and a cow barn 26 by 36 feet. These contain ample space in their basements for the storage of winter apples till spring sales, when prices are unsatisfactory in autumn.

One of the most productive orchards in the county for its size, is that of PETER D. MILLER. It occupies 11 acres, and contains 500 trees set in 1858. The soil is light, deep and rich, and being well cultivated, the trees have made a vigorous growth. Although placed 31 feet apart, many of the branches have met from opposite rows, and in some instances

have extended some feet past each other. The soil has been moderately manured alternate years. We measured some of the trunks 13 and 15 inches in diameter, and all appeared to be at least a foot. Seven acres of the orchard are Baldwins, and these have furnished most of the profits. In some years the crop has sold for more than \$5,000, and for the last 12 years, bearing alternate seasons, the crops, taken together with the barrels, have brought \$32,000, or more than \$20,000 net above all expenses. Mr. Miller continued in debt for his farm till this orchard lifted him out, and gave him many thousands at interest. He informed us that a portion of his orchard, containing 140 trees of the Baldwin, when 16 years old, bore in the year 1875, 1,230 barrels, which sold at \$3.25 per barrel, or for \$4,582.

Mr. M. proposes now to discontinue the annual cultivation of his orchard, and seed it to grass, continuing the manuring and turning in sheep. He will never in future set the trees nearer than 40 feet, and on his deep, rich soil would prefer to place them 44 feet apart. On heavy or clay land they might be nearer.

Wm. B. Corwin, whose farm adjoins that of Mr. Miller, had an orchard of the same age, occupying 12 or 14 acres, which he grazes with sheep. He has sold in one year 2,000 barrels of fruit, at \$1.75, \$2 and \$2.50 per barrel. He had a young orchard, 4 or 5 years old, occupying 25 acres, the trees of nearly perfect symmetry of form.



Fig. 378.—*Specimen of Mr. McClue's Peach Orchard.*

One of the finest peach orchards which we saw, was on the farm of Charles McClue, who owns several hundred acres of land. The trees are 20 feet apart, and the ground is clean with cultivation. On 20 acres of the orchard they were set in 1875, and some were estimated to

bear three bushels. Being extra fine, Mr. McClue thought they would sell at \$1 per bushel, making a handsome return for the 1,200 trees of this portion of his orchard. He has found peaches the most profitable fruit, but he feared the yellows, which as yet had made little or no inroad in his orchard.

### A CAYUGA COUNTY ORCHARD—STANDARD PEARS.

For many years a profitable orchard of standard pears has been in the possession of JOHN MORSE of Cayuga County, N. Y., and in some years has yielded large returns. A portion of it was set before 1850, and when we visited it in 1870, no fire blight had ever been seen on any of the trees. It was then thought that the natural drainage of the soil had caused this freedom from disease; but within a few years afterwards hundreds of trees perished. In some years, before the disease had made serious inroads, Mr. Morse obtained from his seven acres of Bartletts not less than 600 barrels of pears of fine growth, which he had shipped to an eastern city and stored in a cold house. The ripening was thus delayed, and they were sold after the supply in market was mostly gone—some of them, at that time of high prices, at \$26 per barrel, the average being a little over \$15. A single crop amounting in the aggregate to \$9,000, was a handsome return. At our last visit, this Bartlett orchard had a somewhat irregular appearance, younger trees having been transplanted where the blight had left vacancies. In 1880, being the scarce year, it had furnished only 176 barrels for shipment, which were expected to bring over \$6 per barrel, or about \$5 after deducting expenses—in which case the product reached about \$900 for the seven acres.

In the early years of the history of this orchard, Mr. Morse allowed the ground to grow in grass; but finding the fruit of poor quality, he had now cultivated the soil for many years, with the addition of manuring. This practice succeeded well, as the large crop just mentioned furnished the proof. He thought that, since the prevalence of blight, he may have carried it too far, and he proposed to seed down for a time. There is no question, however, that the high prices he has received have been partly owing to this cultivation. We measured some of the specimens of the Bartlett five inches long.

Mr. M. had found the Bartlett the most profitable of all the varieties. Next to this is the Duchesse (as a dwarf); then the Beurre Bosc. The Anjou does not succeed well with him. Skill in marketing constitutes an essential portion of his success; and this skill is only to be acquired by experience.

The entire pear orchard comprised about 30 acres, and there was an equal extent of apple orchard. Two acres of the latter presented a strong and favorable contrast with the rest, although all was a good orchard. The two acres, some 30 years old, have been subjected to cultivation and manuring; and swine having the run of the ground, pick up all infested

and dropping fruit, and root in the ground and destroy the insects of the soil. It was estimated that in 1880 the two acres would afford 600 barrels of apples. But the pears, although attended with more difficulty in management, afford a much heavier and more profitable return.

### A COLUMBIA COUNTY ORCHARD.

The fruit farm of ROBERT MCKINSTRY, near Hudson, N. Y., contains 33,000 trees—the largest number of apple, pear and cherry trees, taken as a whole, in this country, and probably in the world. The trees would form a continuous line, 20 feet apart, from Albany to New-York City. His farm of about 300 acres is wholly planted with fruit trees. The soil is a light, gravelly loam, with a natural drainage, and is well adapted to the growth of fruit. The orchard extends for nearly one mile along the public highway, and to over half a mile in the rear. From some points, where a large portion is seen, they appear like a sea of trees. Six miles of orchard roads extend through the grounds, for access and conveying away the gathered fruit. From 40 to 70 men are employed in gathering, assorting, packing and drawing to the railway during the busy season, which extends from early in June to approaching winter.

The apple trees, which are 26,000 in number, are planted 20 feet apart, with the intention of removing alternate and diagonal ones when they interfere in growth. The first were planted in 1857, and the average age in 1880 was about 14 years. At present they have full space. For a few years they have borne good crops—in 1878 over 20,000 barrels. These are all, or nearly all, sent to Europe, the shipping being commenced in August. Complete arrangements are previously made for this purpose, and in one case Mr. McKinstry received a cable despatch of the arrival and sale of a consignment ten days after it was sent to Catskill station. Two or three cars are frequently loaded in a day. The apples succeed best by being gathered rather early.

The following is a list, with number of trees, of most of the apples planted in this orchard :

7,000 Rhode Island Greening,	200 Jonathan,
7,000 Baldwin,	200 Esopus Spitzenburgh,
4,000 Tompkins King,	200 Ben Davis,
1,000 Red Astrachan,	200 Oldenburgh,
1,000 Northern Spy,	200 W. Seeknofurther.
200 Hubbardston Nonsuch,	200 each of Roxbury and Golden
200 Wagener,	Russet, &c.

The orchard is kept well cultivated, horses plowing the spaces between the rows, and oxen the ground nearest the trees, to avoid injury with whiffletrees. Two yokes of oxen are constantly employed for this purpose, and sometimes four, and four or five teams of horses. Care is specially taken to drive the oxen gently, that they may move quietly, and they soon learn to make voluntarily the required deviations to plow near or between the trees. On the approach of winter, a bank of mellow

earth is thrown up with the plow against the trunks to exclude the mice. This constant cultivation has given fine fruit, specimens of the Baldwin having been obtained which weighed a pound, and of the Tompkins King weighing 21 ounces.

The cherry has been found quite profitable for market. The orchards contain 4,500 trees, largely of the following sorts:

500 Governor Wood,	200 Rockport Bigarreau,
500 Napoleon Bigarreau,	200 or 300 Morello,
800 Black Tartarian,	200 or 300 Early Richmond.

And other varieties, extending to over twenty sorts. The trees were set about 1869. The season of 1880, which was so dry as to be injurious to the apple trees, favored the securing of the cherry crop, over 25 tons having been sold, with scarcely the loss of a bushel by rotting. The different sorts ripening at different periods, prevented the pickers from being over-crowded with work at any time, and not more than 35 were required at once, who would gather about two tons in a day. The fruit was sold chiefly in New-York market, at from 7 to 18 cents per pound. At 12 cents the 25 tons would bring \$6,000—a good return for 40 acres. The soil appears to be peculiarly adapted to the growth of this tree, and it is occasionally necessary to sow oats in the orchard to reduce the vigor of the trees and prevent bursting of the bark. Mr. McKinstry has had, in one instance, nine bushels of cherries from a tree of the Napoleon Bigarreau.

Among the 2,000 standard pear trees, are 700 Bartletts of handsome growth, beside which there are 200 each of Seckel, Sheldon and Anjou. Beurre Bosc proves one of the best market sorts. We saw very little indication of blight among the pear trees.

The borer proves to be the worst enemy of the apple tree, and the many trees which have been destroyed have been promptly replaced by replanting. The only remedy is opening the holes of this insect with a knife and destroying with a flexible wire. Sometimes a dozen have been found in a single tree. The codling moth has given little trouble. Mice were formerly quite destructive, but they are excluded now by the remedy already mentioned—namely, by plowing up mellow earth against the trees.

Beside the preceding named kinds of fruit, Mr. McKinstry has a vineyard of 1,700 Concord grapes, an orchard of 1,000 peach trees, another of 200 crabs of different varieties, and the highway is lined with 450 maples. He gives constant personal attention to the management of his orchards, which show the superintendence of a skillful hand, although the trees had suffered in 1880 by a long-continued and extraordinary drouth.

## ORNAMENTAL AND VEGETABLE GARDENING.

## PLANTING A WILD GARDEN.

WITH THE IMPROVEMENT of a cultivated taste, the appreciation increases for a wild or natural garden. It was the custom formerly to make gardens appear as artificial and stiff as possible. Straight lines and formal curves exclusively prevailed. One side of the grounds was an exact reflection of the other. Now this stiffness is becoming discarded, and the grace of free and irregular beauty is taking its place; and the immeasurable superiority of undistorted forms is shown in all the wildness and intricacy of natural scenery.

We have seen a beautiful unplanted grove growing among the rocks of a wild gorge, rendered exceedingly attractive by interspersing the native shrubbery with planted rhododendrons, which were in full bloom when we

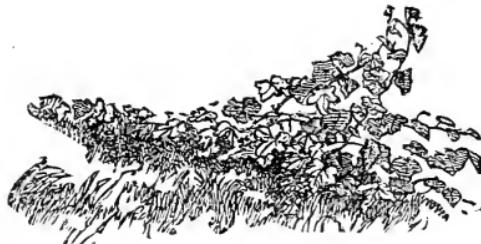


Fig. 379.

saw them. Additional charms might be added by investing the rocks and bushes with the trailing forms of the hardy clematis, of the periploca, climbing honeysuckles, &c., (fig. 379); while the wood lilies, gentians, and other plants which bloom freely in the shade, would give additional attractions. Early in the season masses of the hepatica, sanguinaria, erythronium, and



Fig. 380.

other spring-blooming wild plants, would make such a wild garden exceedingly attractive (fig. 380). Cultivated exotics, such as our common bulbs, snowdrops, squills, hyacinths, &c., might be introduced in open spaces

along the borders of the more dense portions of the wild shrubbery. If these were properly introduced, they would lose all the artificial appearance too often given them, and become an essential component part of the wild scenery, and their ornamental effect be thus greatly increased.

For such a garden to give the best effect, it is almost essential that the surface be more or less uneven, and a small ravine, with some rocks, would be a valuable addition. A stream of water lined with ferns and water plants, would add still farther to its charms. A narrow, curved gravel-walk, kept smooth and in perfect finish, would not be discordant with the general effect; it would be the only artificial part of the grounds that could be admitted.

Those who may have small "waste" portions of land on their farms or suburban grounds, where wild bushes and trees have grown up, may at a moderate expense, some taste, and a good deal of industry, make a beautiful garden, at much less cost than the formal plantations which they do not hesitate to undertake. Summer is the time to take it in hand; to set out the bulbs, and to secure the wild flowers from the woods. This should not be sparsely done—they should be planted in irregular and profuse masses, and the appropriate positions of each be assigned them.

**MAKING LAWNS.**—The quickest way for a limited area is to procure turf from an old, even, closely-grown pasture, cut accurately square, and scraped to even thickness, according to the illustrated directions given on page 103, vol. VIII, of *RURAL AFFAIRS*. Seeding down is cheaper, and is adapted to larger grounds. If the soil is weedy, summer-fallow it one season, by repeated and continued plowing and harrowing, turning up, starting and killing all foul weeds. Make the surface rich with old manure or compost before a few of the last harrowings; sow, early in spring, at least a bushel or two of any fine grass per acre, brush or roll in, and a dense mat of new grass will soon make its appearance, the manure preventing the bad effects of drouth. Without the summer fallow, weeds may give future trouble. Use the lawn mower every five days till mid-summer, and gradually less often afterwards.

**DURABLE SUMMER HOUSES.**—These, when made of rustic work, or of small strips of wood for the lattice work, are liable to decay in a few years. A writer says that he prevents decay by allowing only annual climbers to cover them, which are stripped off on the approach of cold weather, and they remain bare through winter and spring. A much easier, better, and more perfect way, is to soak all the wood-work as soon as the structure is made, with crude petroleum applied with a coarse brush. In an experiment now before us, light wood-work so treated, remains perfectly sound after 15 years, when other work not oiled was decayed in four years.

**ORNAMENTAL SHRUBS.**—There are a few ornamental shrubs and small trees which are so widely known, because so desirable in every respect

for small grounds, that it is hardly necessary even to name them, such as the common Siberian and Persian lilac, Tartarian honeysuckle, philadelphus, Japan quince, purple fringe, snowball, &c. The silver bell (*Halesia*), although not new, is a fine ornamental shrub; and the same may be said of the purple-leaved Barberry and dwarf horsechestnut. The small double-white spirea and the two species of weigela, although rather new, are widely disseminated. Still more recently introduced are *Deutzia crenata*, one of the most beautiful of summer bloomers, and the new hydrangea (*H. paniculata grandiflora*), magnificent in early autumn with its large panicles of white and rose flowers. Both are perfectly hardy.

**PREVENTING SUCKERS.**—There are some good shade trees which have the fault of sending up many suckers. The entire removal of such trees is often followed by a profuse growth over the whole surface. It is therefore well to remember that suckering trees should always be cut away in summer, and not while dormant. If cut in summer, such a check will be given to the roots that few suckers will come up; cutting in winter or spring will cause an abundant growth. Placing common salt on the stump as soon as the tree is cut, will prevent their growth at this season. If the salt is applied afterward it will do little good.

**PLANTS FOR SHADE.**—Vick's Monthly recommends the following flowers for the shade, where it is necessary to plant in such places: All the lilies which grow in partial shade, violets, peonies, lily of the valley, aquilegia and ferns. To which we may add several native plants which bloom freely in the woods, as *Trillium grandiflorum*, *Hepatica*, *Phlox divaricata*, *Pulmonaria*, and especially *Lilium philadelphicum*.

**POPULAR ROSES.**—A French journal gives the following number of votes received by certain varieties of roses, out of 85 lists sent in by amateurs: La France had 79 votes; Baronne Adolphe de Rothschild, 76; Paul Neyron, 76; Gloire de Dijon, 72; Souvenir de la Malmaison, 72; Jules Margottin, 70; Marechal Niel, 70; Baronne Prevost, 57; Gen. Jacqueminot, 52; Captain Christy, 50; Belle Lyonnaise, 47; Eugene Apert, 47; Louis Van Houtte, 47; Anne de Diesbach, 47; Aime Vibert, 44, and a long list ranging down to 22 votes. The list could be varied in this country, and La France, for example, placed a little lower down, on account of a want of hardiness and vigor of growth.

**MILDEW ON THE ROSE.**—A writer in the California Horticulturist speaks of the success of the application of sulphate of copper for mildew on rose bushes, using half an ounce or so to a pail of water.

**THE CHINESE PRIMROSE.**—In an extended article on its culture, the Gardener's Monthly gives the following essential requisites for success: Gather the seeds when fully ripe, as they are worthless when immature; keep the young plants moderately moist, not wet, and not too warm. Give plenty of light. The soil must be of the richest quality; or of one-third muck or decayed sods, one-third rotted stable manure, and one-

third sand, intimately mixed and sifted. Cover the seed a tenth of an inch and press the surface, and water with a fine rose sprinkler. Avoid soaking the young plants. The best time to sow is early in July. They may be removed to small pots in a month, and will begin to bloom in December, after transferring to larger pots as the roots require.

**SAVING FLOWER SEEDS.**—A writer in the *Practical Farmer* gives the results of experience in saving flower seeds. No general rule can be laid down, each sort requiring special treatment. Pansy seeds must be saved while they are quite green, as the pods burst as soon as they turn yellow, throwing the seed several feet. Plants of phlox are pulled up when a fair amount of the seed is ripe, and spread on large sheets in a warm garret. On a small scale hand-picking may do. Petunia and portulaca are treated in the same way, except that the portulaca plants are cut off, and they grow up again for another crop. Verbenas must be hand-picked twice a week for several weeks.

**SUMMER CULTIVATION.**—The thorough cultivation of hoed crops, fruit trees and small fruits, which is continued through spring and early summer by good managers, is frequently relaxed later in the season, and weeds often get a start and some headway. Continue the work of their destruction, and by keeping the surface of the soil clean and mellow, kill them before they come up. Use only the best and sharpest tools, grind hoes often, do by horse-power all that you can, and finish by hand. Stir the ground after a shower, and before a hard crust can form.

**THE PLOW IN GARDENS.**—A common reason why farmers of moderate means have not had better kitchen gardens is that they have not learned how to cultivate them at little expense. Going through once a week, to keep the crops clean, and in the best growing condition, could not be performed by hand. Many are imitating the practice of the large market gardeners, and do the work by horse labor, and with the drill, plow and cultivator. There are a few crops that need planting in beds, and a small portion of the garden may be devoted to these. All the rest may be arranged for horse work. The great advantage here is that no care or skill is required in laying out. All that is needed is a turning ground at each end, 12 feet wide, for the horse. This may be a smooth grass walk. Rows of currant, gooseberry and raspberry bushes and dwarf fruit trees may occasionally extend across the garden parallel with the rows of vegetables. After the plants have a fair stand the horse will do nearly all, and the garden may be kept cleaner than ever before at a tenth of the cost. By passing once a week, and keeping the ground constantly mellow, the crops will make a fine growth.

**HOEING CABBAGES.**—An old farmer informed us that he once tried an experiment to prove the advantage of keeping the soil well stirred among his cabbages. He and his hired man were engaged in a contest which should have the best crop. He hoed his once a week all summer, and yet the hired man's cabbages grew best, for which he could not account, as

he never saw him at work among them. But accidentally he found out the secret. The man rose every morning at four o'clock, and did the hoeing before sunrise, when no one saw him. He hoed them, not once a week, but **six** times in the week. This experiment shows the importance of planting the crop where a narrow cultivator drawn by a horse can readily be run, and the work done rapidly, often, and at little cost of labor.

**WINTER CABBAGES.**—A writer in Vick's Monthly says that plants set out late, from June or July sowing, keep best, and are found almost as tender in winter as cauliflowers. Those which are sown early and grow to large size do not compare with the excellent and tender heads of young cabbages.

**FROST EXCLUDED BY KEROSENE.**—J. J. Gregory of Marblehead, Mass., states that the temperature in his vegetable cellar sometimes went a few degrees below freezing, making the air just cold enough to spoil the contents. He procured a kerosene stove, which had six large burners, and holding two gallons of oil. Whenever his two thermometers in the cellar indicated danger, he lighted the kerosene, by which he raised the temperature ten degrees when necessary, and he said that this proves a convenient, simple and cheap way to prevent any loss.

**PRODUCTIVENESS OF TOMATOES.**—A writer in the Prairie Farmer says that tomatoes yield on an average 125 bushels per acre, although 400 bushels have been produced in rare instances.

**INSECTS ON ROSES.**—A writer in Vick's Monthly mixes a teaspoonful of white hellebore in a pailful of water, and applies it with a sprinkler. This destroys the insects, and the roses are clean. A correspondent of the Gardener's Monthly finds whale-oil soap the most effectual remedy, one pound of soap being added to eight gallons of water. It is applied at night, the plants being thoroughly drenched, every two or three days.

**THE ROSE BUG.**—The following remedy has been published in some of the papers: With a pine stick in a vial of turpentine, touch a cluster of the bugs, or each **one** separately. It kills where it strikes. A more rapid way would be to cover thinly the bottom of a tin pan with turpentine or kerosene, and then knock the rose bugs from the bush into the pan. Or immerse a cloth in kerosene and spread it on the bottom of a flat basket, pan or box, and jar the rose bugs on it.

**KEROSENE FOR PLANT LICE.**—A correspondent of the California Horticulturist, after using carbolic acid for the scale bug on orange trees, camellias, &c., which proved too strong in solution, destroying both plants and insects, employed pure kerosene, through an atomizer, spraying it over camellias. The leaves were covered with the scale and black fungus. A very small quantity was enough to cover the whole plant. After the fluid had evaporated, the scales were found dead, shrivelled and detached; the black fungus was dried to a loose powder. The same remedy was tried on pelargoniums and the flower buds of greenhouse roses, but these

were too delicate, and the new and tender growth, as well as the insects, was destroyed.

**SCABBY POTATOES.**—Dr. Hexamer states, in the Tribune, that the scab on potatoes is produced by "mites," or minute animals, which first cause blisters on the young tubers, leaving subsequently holes or pits. The use or absence of ashes, and manures from various animals, seems to have no influence on them one way or the other, nor scabby or free seed, nor land on which potatoes have not been raised for many years; but since the exclusive use of commercial fertilizers, they have become entirely free from the scab.

**CABBAGE WORM.**—We have seen a statement in some of the papers that cabbages had been kept entirely clear of this insect by the aid of chickens, in a plantation of some thousands of plants. Screenings were first scattered to attract the fowls among the cabbages, and then discovering the worms they kept the whole patch clear. We have found this method to answer well, provided the chickens are not full grown; when older, they eat the cabbages. Young turkeys are still better, their keen eyes and quick motions allowing nothing to escape.

The members of the Elmira Farmers' Club, as reported in the Husbandman, severally recommended cayenne pepper, whale-oil soap and tar-water, for the cabbage worm. Objection was made to the whale-oil soap, as imparting an objectionable taste to the cabbages. The cayenne pepper might do best in a strong decoction. Paris green was mentioned as very effective, and it would doubtless prove so both to the worms and to eaters of the cabbage.

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## NOTES AND ITEMS IN FRUIT CULTURE.

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### RENEWING FRUIT GARDENS.

**T**HE OWNERS OF GARDENS and family orchards find that as the trees become old, some of them lose their vigor and productiveness, and require special attention, and to some extent the plantings must be renewed. It is not often that the old standard sorts can be replaced, but there are some new varieties that may be added to old collections with advantage.

Fruit trees too frequently lose their productiveness and value by neglect. Peach trees are more sensitive to grass and hard ground than cherry trees or standard pears. It often happens that after a few fine crops of peaches on thrifty, young and cultivated trees, the owner ceases further care, and the trees linger and die. Constant tillage of the ground, and the necessary cutting back to keep up a thrifty growth, would preserve them many times longer. It is not often that old and stunted peach trees can be restored to vigor and a good form; but sometimes cutting them

a reader of these remarks who would not do a good thing for himself and family, by setting out fifty bushes. They never come amiss, and they down to the ground at the right season of the year (or when dormant) has sent up young shoots that have given a second edition to their lives, in connection with good tillage. If young shoots start out near the centre of the head, all the rest may be cut off, and a new head is formed. This treatment, however successful it has occasionally been found, must not be mainly depended on, but young trees set out are to be the main reliance.

There are very few owners of family orchards and fruit gardens who would not find an advantage in making additional plantings. The new varieties, as Amsden, Beatrice and Rivers, will give them a succession of peaches at least two weeks earlier than the earliest of Hale's and other old sorts. By a careful selection they may fill in gaps elsewhere. Land owners as far north as Albany and Rochester, where the trees will endure the winters, may as well as not have peaches in full supply from the last of July till autumn frosts. Their enjoyment, however, will be of few years' duration unless they plant the trees where they will be subjected to cultivation.

Apple trees require less frequent renewal than peaches, but even with these, important additions may be made by selection in order to obtain a good supply at all times. The earliest apples ripen in Western New-York early in August; there should be a constant supply for the table and for culinary purposes until the following spring. The barren or "off" years are now a serious drawback to a yearly as well as a continuous supply in season. This deficiency may be at least partly remedied by top-dressing the trees annually with manure, and by stripping off all the blossoms as soon as they are expanded in the productive year, on a part of these trees. Top-dressing with manure is to be especially recommended for this purpose. If the orchard is so fully grown as to cover the whole ground with its shade, it may be seeded to grass, and grazed with sheep from spring to near picking time. The close grazing will be good for the orchard; the droppings of the sheep will add to the effect of the regular top-dressings; and the devouring of the fallen and immature fruit by the sheep will destroy many of the codling worms. There should be a sufficient number of sheep to pick up all the droppings from the trees, and to keep the grass short; and to prevent these animals from suffering for food, place a sufficient number of feeding troughs in the orchard, and see that they are regularly supplied with oats or corn.

Pears give ripe fruit from the middle of July till after midwinter. The regular succession is easily made out.

Plums may be had by any one who is willing to protect them from the curculio for about two months, and they afford not only an agreeable variety in connection with other fruit, but are excellent in themselves.

Of the small fruits, currants are too much overlooked. There is scarcely

hang on the bushes two months, giving a valuable daily supply to the table, and rather improving in quality with age. The only trouble with them is the currant worm, and this is destroyed, if taken in time, by a few minutes' work with hellebore. By cultivating and enriching the ground, and thinning out the old wood, the fruit becomes larger and better, and makes a finer display on the table.

For the benefit of those who would like a selection made of a few leading sorts of these different fruits, we give the following, which every man will vary more or less, by adding to or reducing, according to locality or latitude, or personal preference. If securely heeled-in till spring, by filling closely all interstices among roots and stems, in smooth, clean ground where mice will not reach them, they may be safely set out early, and a better selection obtained than after the sales of autumn. Purchasers will remember that trees of most kinds are cheap and abundant at nurseries in August, and that no better time could be chosen to replenish their plantations.

*Peaches.*—The following will give a good succession for two months at the North, and may be considerably varied according to circumstances and still accomplish the same end: Amsden, Early Beatrice, Early Rivers, Hale, Serrate Early York, Early Newington, Cooledge, Large Early York, Crawford's Early, Morris White, Crawford's Late, Stump, Smock, Ward's Late. Heath Cling will ripen in warm autumns, and may be kept two or three weeks in a cold place.

*Plums.*—Primordian, Rivers' Early Favorite, Early Royal, Prince's Yellow Gage, Lawrence, Lombard, Purple Gage, Smith's Orleans, Jefferson, McLaughlin, Reine Claude de Bavay, Coe's Golden Drop, Coe's Late Red.

*Cherries.*—In giving a list of these, we must remark that nearly always they are eaten before ripe. Take the old Mayduke for example—very few persons who raise it have ever seen it fully ripe, when it is quite black, instead of dark red, and nearly double the size when commonly picked. An extensive marketer of fruit told us he sold the Black Tartarian quite early as "red cherries," and the same variety three weeks later, and when much larger, as "black cherries." The Early Richmond, from its name, would be regarded as one of the first sorts, and it is usually picked early, but it is never fully ripe till the middle of July, when nearly all other sorts are gone. When fully mature it is very dark red, almost black, and much larger in size than when commonly used. Here comes in a difficulty; the birds sweep off all that are left long on the tree, and they are the only fruit devourer against which we know of no protection.

The following are among the best cherries, in the order of ripening: Early Purple Guigne, Belle d'Orleans, Doctor, Coe's Transparent, Black Tartarian, Mayduke, Rockport, Early Richmond, Yellow Spanish, Downer's Late, Morello.

*Apples.*—Nearly every fruit raiser prefers to make his own list, and will include, among other sorts, Early Harvest, Summer Rose, Sweet Bough, Primate, Autumn Strawberry, Porter, Gravenstein, Twenty Ounce, Fall Pippin, Hubbardston Nonesuch, Rhode-Island Greening, Baldwin, Northern Spy, Roxbury Russet.

*Pears.*—All will say Bartlett—and before this we might begin with Summer Doyenne, then Giffard, Rostiezer, Washington and Tyson. After Bartlett take Seckel, Boussock, Howell, Sheldon, Bosc, Urbaniste, Duchesse d'Angouleme, Anjou, Lawrence, Winter Nelis and Josephine de Malines. If you have a special desire not to be troubled with blight in future years, your best chance for escape will be to plant largely of Winter Nelis, Seckel, Anjou and Duchesse.

*Grapes.*—Every owner of a place should have a good supply for his table from the first of autumn till midwinter. He may plant the eighth of an acre or more with Hartford, Delaware, Diana, Concord, Isabella, Salem, &c. Try the new sorts of high promise sparingly till well proved.

Blackberries of the Kittatinny and other sorts; and Philadelphia, Clarke, Franconia, Herstine and black-cap raspberries; almost any sort of currant, and the well-known strawberries, will give an excellent, valuable and grateful supply of fresh fruit for the table through summer. Secure all your trees and plants, and no high-priced ones, and be ready to do a good deed for yourself and your family, by providing plenty of delicious, fresh fruit.

#### MISCELLANEOUS SUGGESTIONS.

**PEACHES IN COLD CLIMATES.**—The severe winters in portions of the Western and Northwestern States, have proved a formidable barrier to the successful cultivation of peaches, the fruit buds being killed by the intense cold when the trees escape. Different modes for protecting the fruit buds have been resorted to, but none appear to have been so suc-



Fig. 381.

cessful as that adopted by Stephen Jackson of Marshall county, Iowa. Although the latitude is only 42 degrees, the thermometer usually sinks to 18 or 20 degrees below zero, and sometimes much lower, leaving little chance for the peach crop. Mr. Jackson sets his young peach trees in an inclined and nearly prostrate position, as shown in fig. 381. On the approach of severe weather, he throws on them six or eight inches of compact hay, which affords sufficient protection. The fruit buds escape, and

early the following spring, or sooner, the hay is removed, and is not injured for feeding animals. His trees are loaded with fruit every year, and to keep the crop off the ground, to which the weight of leaves and fruit would bend it, short props are inserted, as in fig. 382. He had in 1879 a bushel of fruit from each tree, while other trees in the neighbor-



Fig. 382.

hood bore nothing. The fruit is excellent in quality—better than he can buy in market; perhaps near proximity to the ground may cause it to ripen better. It will be seen that this mode of growing may be employed in the extreme North without any difficulty, where trees will grow at all and early sorts ripen, by adapting the thickness of the covering to the severity of the climate.

**ELEVATED PEACH ORCHARDS.**—A correspondent of the Michigan Farmer mentions a strong case showing the advantage of placing peach orchards on elevated ground, and away from frosty valleys. At Paw Paw, twenty-five miles east of Lake Michigan, and beyond what is termed the “fruit belt,” no peach buds escaped the frost of the winter of 1879-80 on level ground. On all elevations of fifty feet or more all escaped injury. Lower down the tops of tall trees had only a few buds which escaped. On the range of hills in that region, all the trees were loaded with blossoms from top to bottom.

**PEACHES FOR MISSOURI.**—George Husmann, who has fruited over fifty sorts by way of trial, recommends the following list of peaches for a regular succession in that State from the first of July till the middle of October: Amsden, Hale, Tillotson, Morris’ Red Rareripe, Oldmixon Cling, Oldmixon Free, Royal George, President, Ward’s Late, Heath Cling, Steadley, October Beauty. The last named is a new and local sort; it ripens half a month later than Heath Cling. Mr. H. would perhaps add Beatrice between Amsden and Hale, and Early Rivers between Hale and Tillotson.

**THE PEACH GRUB.**—Where not abundant, these insects are easily removed with the point of a knife. A correspondent of a western paper uses stiff paper coated with grafting wax, first removing all the grubs, drawing away the earth, and placing the paper around the stem so as to reach a foot high. The wax causes it to adhere to the stem without tying. It is intended only for young trees, and it may be applied to newly transplanted ones before they are set. It needs renewing every spring.

The following composition of a wash to repel this grub is given by M. B. Bateham: For an orchard of say 500 bearing peach trees, we buy a pint of crude carbolic acid, costing not over 25 cents (or half as much of the refined), then take a gallon of good soft soap, and thin it with a gallon of hot water, stirring in the acid and letting it stand over night or longer; then add eight gallons of cold soft water, and stir. We then have ten gallons of the liquid ready for use. Some peach growers use a little more and others less of the acid. The proportion stated is strong enough, and if much stronger, would be likely to injure the trees. The wash should be thoroughly applied with a swab or brush around the base of each tree, taking pains to have it enter all crevices.

**DISTANCES FOR GRAPES.**—The strong-growing American grapevines must have ample space to grow. They may be restricted for a few years and bear moderate crops, but when they are older they should have a full chance to throw out their long arms. The late Wm. A. Underhill of Croton Point, N. Y., showed us a part of his twenty-year Isabella vineyard where he had allowed the vines to extend over a roadway, giving them some 16 feet more room. The improvement in the crop was striking. Mr. A. Hood of Ontario planted Concord 6 feet apart each way. They bore little fruit. The spring of the seventh year he took out every alternate vine, and then had a fine crop. He tried a similar experiment on a large Catawba vineyard planted 8 feet apart; the result was a greatly increased quantity of grapes. He also stated that Concord vines covering 24 to 48 feet of trellis, carried by actual measurement more grapes than any adjoining vines 12 feet apart and occupying the same extent of trellis.

An experienced grape-grower stated to us that he had planted his vines 12 feet apart, and had grafted every alternate vine with another sort. The grafts failed to grow, and the old vines, being thus thinned to one-half in number, gave a much better crop than the whole did before. We might cite many other cases—all showing the importance of giving ample space to strong growers. And one other precaution should always be observed—never to allow the vines to overbear; thin out the numerous bunches. We do not now hear vineyardists, as formerly, boast of the many tons of grapes they have raised to an acre, as they have learned that the fruit is better, and the vines less exhausted, when the thinning has been properly done.

**PLANTING A VINEYARD.**—M. B. Bateham writes to the Practical Farmer that in planting a vineyard with a view to profit, he would first select a high ridge of clay land near the lake, and in a neighborhood noted for escaping the rot, and not near old vineyards. He would select and plant such newer sorts as he could procure, known to be of good quality and fine appearance; and not likely to be soon plenty in the markets. If the prices of the plants were too high, he would wait a year; if mildew attacked the vines, he would apply sulphur. Among the new sorts, he

named Worden and Brighton, and of those still newer, the Prentiss, Duchess and Niagara.

**KEEPING GRAPES.**—The Southern California Horticulturist recommends the following mode: Spread the carefully cut fruit thinly on shelves or tables for a few days, to dry up the stems a little. Then cut clean, dry rye straw in a straw-cutter, about an inch long, and cover liberally the bottom of a suitable tightly-jointed box, on which place a moderate layer of fruit; then cover with the cut straw liberally, and lay on fruit again, and thus proceed. Put them in a cool, dry place, and the grapes will keep sound for several months.

**TOP-GRAFTING APPLE TREES.**—An inquirer asks what sorts he shall insert in the tops of a number of apple trees in his orchard, which are 10 to 12 years old, and which, having borne, have proved worthless, and whether the change could be made by budding in summer. Answer: The same sorts may be inserted which prove most valuable among his bearing trees; but it is sometimes advantageous to graft slow growing sorts of value, as they will grow with more vigor, and have a good base to stand on—such, for instance, as the Jonathan and Red Canada, apples of excellent quality, and which in some markets bring advanced prices. A large number of grafts, say ten or twenty, judiciously inserted, will make a bearing head sooner than a few, but you must vary the number with the condition of the branches. It is better to give more than one year to the operation, beginning in the middle and upper part first, so as not to check the tree too much by lopping off all the growing part. Budding can only be done in mid-summer, and you can perform the operation well only in young and vigorous shoots near the centre of the head, when such happen to be found.

**A GOOD ORCHARD.**—W. H. Rogers of Orleans County, N. Y., has an orchard of two acres, set in 1820, the crop of which sold in 1865, for \$1,800, and it had averaged 400 barrels yearly for 15 years. Hogs have the run, and root in it as they please, to favor which corn has been scattered, and some manure has been applied in addition. In younger orchards Mr. Rogers has 75 Baldwin trees, giving him six barrels three years after planting, and good crops every year since; and 14 trees of Tompkins King gave 11 barrels the sixth year, and an average of 20 barrels yearly since. These young orchards were cultivated and no crop taken.

**PROFITS OF APPLE ORCHARDS.**—This subject was freely discussed at a meeting of the Western New-York Farmers' Club. From the report in the *Rural Home*, we condense the following estimate of cost and profit:

A. G. Newton said that while the controlling influences of care, culture, locality and insects have much to do with the results, the average figures would be 45 to 70 cents per barrel for picking, packing, handling and hauling, and for the cost of the barrels. An orchard will yield from 50 to

75 barrels per acre under good culture; and one-half, or the best, would sell at \$2 per barrel, and \$1.50 for second quality. The sales would amount to about \$87 to \$130 per acre. Deducting the expenses, including moderate manuring, &c., an estimated profit is left of \$50 to \$95 per acre, at \$2 and \$1.50 per barrel. But if the sales are only \$1 and 75 cents per barrel, the estimated profit is reduced to about \$20 per acre. For an orchard bearing only alternate years, the average would be reduced to \$45 and \$60 per acre one year, and to zero the other.

**THINNING APPLES.**—President Wilder stated, in an address before the Pomological Society, that in the English market American apples of good size, fair, and properly packed, commanded fully double the price of those which had not received that care; and that in our own markets Baldwin apples from a grower who carefully thinned his fruit, brought two or three dollars per barrel, while his neighbors' fruit, from trees not thinned, brought only one dollar.

**SPOTTED FRUIT.**—The Canadian Horticulturist says truly, that the most effectual remedy for spotted fruit is to avoid planting those varieties which bear it. The following are named as particularly liable: Newtown Pippin, Fall Pippin, Early Harvest, Rambo and Fameuse. Red Canada may be added. Those most free are the Russets, Baldwin, Red Astrachan, Gravenstein, Duchess of Oldenburgh, &c.

**APPLES FOR NEBRASKA.**—The Horticultural Society of Nebraska prepared a select list of apples for that State, which may be planted with confidence by those who desire small orchards for home use. If only seven sorts are planted, the Society recommends as summer varieties, Red June and Cooper's Early White. For autumn, Maiden's Blush and Fameuse. For winter, Rawles' Janet, Wine Sap and Ben Davis. If twelve sorts are desired, add the following: Red Astrachan for summer; Rambo for autumn, and the three following for winter: White Winter Pearmain, Domine and Talman Sweeting. This would doubtless be a good list adapted to all the western regions possessing soil and climate like that of Nebraska.

**CULINARY APPLES.**—These should not be wholly overlooked in making selections for planting out. T. T. Lyon of Michigan, who is fully competent to make such a selection, has named the following: Red Astrachan, Duchess of Oldenburgh, Gravenstein, Lowell, Alexander, Keswick Codlin, Rhode-Island Greening.

**HARDY APPLES.**—The Wisconsin Horticultural Society adopted a list of six varieties of the apple, hardiness being the only test. They were Duchess of Oldenburgh, Wealthy, Tetofsky, Haas, Fameuse and Plumb's Cider.

**THE ONE BEST APPLE.**—The question was brought up at a meeting of the Michigan Pomological Society, "If all the apples were stricken from the list but one, what would we choose to save for Michigan?" The following answers from different members were the result: The Bald-

win, for all uses—market, dessert, cooking, growth and bearing of the tree; the Northern Spy, for being hardier in tree and better fruit than the Baldwin; the Wagener, because the tree is smaller and bears earlier than the Northern Spy; another member would choose the Rhode-Island Greening. Those present appeared to be nearly equally divided between the first three, the Baldwin rather taking the lead.

**APPLE TREE BORER.**—S. Miller states in the *Rural World* that in the spring of 1879 he wrapped 30 young apple trees with common newspapers, which extended from a few inches underground to a foot above. In applying this wrapping, the soil was removed from about the base of the stem, and a cord passed around the top of the paper, and half-way down. The replaced soil held the paper at the bottom. At the end of the season the trees were examined and not a borer found in them. A few rods from these trees were others not thus protected, all of which were infested with borers, and some nearly ruined by them.

**CODLING MOTH.**—Prof. A. J. Cook recommends that the windows of fruit rooms and cellars where apples have been kept through winter should be covered with wire gauze during the months of May and June, that the moths which have come from the fruit may not escape to the orchards.

**KEEPING APPLES.**—B. Hathaway describes, in the *Michigan Farmer*, his mode of keeping apples. Those which incline to wilt, like the Russets, are put in barrels. The more juicy sorts, like the Northern Spy, Greening, &c., are placed in crates, where they will have more air. The apples are stored in an outside cool place till freezing weather approaches, when they go to the cellar. This holds 1,500 bushels, and leaves space for work and passages. The fruit room occupies the whole cellar, which admits of better ventilation than if a portion is partitioned off at one side.

The following rough but good way to keep apples in winter where there is plenty of material, is given in the *Practical Farmer*, and we quote it for the suggestions it affords: Buckwheat chaff is first spread on the barn floor, and on this chaff the apples are placed, when they are covered with chaff and straw two or three feet in thickness. Here they remain till spring. It is not stated that the interstices are filled with buckwheat chaff, but this care would be important. The covering and bedding in chaff has several important advantages—it excludes cold, prevents air currents, maintains a uniform temperature, absorbs the moisture of decay, and prevents the decay produced by moisture.

**DRYING APPLES.**—A report was made to the *Ohio Horticultural Society* on the Alden process of drying. One of the machines at Adrian, Mich., had cost \$10,000, and had paid for itself in five years. It dries 400 bushels of green fruit every 24 hours, and employs 60 hands, mostly girls. The white color of the dried fruit is secured by driving fumes of sulphur through the dryer.

**SENDING APPLES TO EUROPE.**—The 1880 report of the committee on this subject to the Massachusetts Horticultural Society, contains some interesting statements. For early shipment, the Gravenstein and Hubbards-ton Nonesuch do best, and later the Rhode-Island Greening and Baldwin. The first shipments had arrived in the best condition; later, the fruit approached decay, and the second and third shipments had in some instances resulted in loss. The first fruit sent in autumn was Gravenstein, which arrived in fine condition, and brought good prices; and this success induced later shipments of the same sort, which came in a damaged state. The best success with the winter apples was with those which were sent while fresh, early in winter. Of the 200,000 barrels mostly grown in New-England and exported from Boston, the shippers had received a profit of only 4½ cents per barrel. There is no doubt that after understanding the business better, and sending none but the very finest selections, better profits will be obtained.

**PEARS IN CALIFORNIA.**—According to the California Horticulturist, the varieties for profitable planting have been narrowed down to those for eastern shipment, including Bartlett, Winter Nelis, Doyenne d'Alencon, Easter Beurre and Beurre Clairgeau. For family use, other sorts would of course be planted.

**LARGE AND SMALL FRUITS MIXED.**—S. D. Willard, two miles west of Geneva, has, besides his extensive nurseries, 18 acres devoted to fruit-raising, planted in 1874, and in six years affording profitable returns. Twelve acres more were planted in 1880. Of the 18 acres, every square rod appears to be well occupied. The larger trees are peaches, pears and plums; between these are currants, raspberries, grapes, gooseberries, &c. The ground is in excellent condition. The young plum trees were loaded with fruit, the jarring process having been employed to destroy the curculio. Reine Claude de Bavay had proved quite profitable, the fruit selling at \$3 per bushel; other sorts at \$2. The sales from these 18 acres are now between \$1,700 and \$1,800 in one year. In 1880, four tons of currants were sold for nearly \$400.

**NETTING FOR GARDENS.**—A writer in the London Garden states that he has a hemp fly-line, which has been in use at least thirty years, perfectly sound and good, which was, when new, steeped in linseed oil, and then stretched and dried in the sun. He also has netting, similarly treated, which has been in use some years. The net should lie in the oil, or in an oily state, for a day or so, and be then wrung out, so as to free it as much as possible from outside oil; afterwards stretched and dried in the sun, several days. Nets are attached to a light frame 4 by 6 feet, by a small galvanized wire running through the meshes all around, the ends being fastened to the wood frame. The wires are placed at intervals of a foot, and the frames, laid on pegs, are used to protect beds of strawberries, currants, and other small fruits.

**STRAWBERRY RUNNERS.**—A correspondent of the Garden, in describ-

ing his mode of securing early strawberry runners for forcing, states that the layers from forced plants put out early the previous season in good soil, as well as those from autumn planted runners. From these the very earliest runners are selected, and without waiting for them to show leaves, they are pinched beyond the first joint as soon as the joint is visible. The point is immediately layered in good rich compost, and roots are rapidly formed, resulting in plants fit for potting much sooner than by any other method.

**STRAWBERRIES THE YEAR ROUND.**—The editor of the London Garden, in answer to an inquiry, says that ripe strawberries can be had the year round, and that there is no difficulty about their production every day of the year, only quality must be left out of consideration from October to February, for without sunshine, under the most favorable conditions, the fruit is insipid, and adds that it is hardly worth while to incur great expense for strawberries that are only good to look at.

**RASPBERRIES AND BLACKBERRIES.**—The *Rural New-Yorker* pronounces the Turner as promising to be the best and most valuable early raspberry, and the Cuthbert as the best late sort, and thinks that the Snyder blackberry will be a popular market fruit. We find no other sort to approach it for hardiness, and it is profusely productive. The small size of the berry is a drawback.

**PROFITS OF FRUIT-GROWING.**—C. T. Fox, of the Pennsylvania Fruit Growers' Society, states that Christopher Shearer of Berks county, who has several orchards on his hundred-acre farm, realized from them in 1879, the aggregate sum of \$12,000. The Berks County Agricultural Society, in its award of premiums, gave him the first premium for orchards, and enumerated in them 2,600 peach, 1,049 apple, 576 pear, 436 plum and 223 cherry trees. Henry Wager received the second premium for his orchard of 3,195 peach, 525 apple, 28 pear, 25 plum and 10 quince trees. He began planting in 1870, and in 1880 had 45 acres in fruit. Sixteen acres of peach orchard were planted in 1869, and in 1874, 1,600 baskets were sold in Reading at an average of \$1.60 per basket, amounting to \$2,560. In 1875, 3,000 baskets brought \$2,550. In 1876, 4,300 baskets sold for \$3,225; in 1877, the crop yielded only 300 baskets; in 1878, 1,200 baskets sold for about \$1,500, and in 1879 the crop brought \$770. The whole amount yielded from the 16 acres in the six years named was 10,750, or \$1,790 per annum. We give the amounts for the different years to show that the profits were continuous, and not exceptional. These good returns are rare and are exceptions to the general rule—for the reason that such good management is not common. The owners have studied soil, climate, cultivation, selection of sorts, packing and marketing, or in other words they understand their trade thoroughly. The effect of the \$200 and \$100 premiums on these orchards, awarded by the agricultural society, was the planting of as many fruit trees in the county in one year as in the ten previous years.

FRUIT CROP OF THE COUNTRY.—The annual value of the apple crop of the United States is estimated at \$51,000,000, of which Ohio supplies over \$7,000,000. The whole peach crop is estimated at \$50,000,000, and the pear crop at \$15,000,000. The strawberry crop is placed at \$5,000,000. Exported canned fruit is estimated at over \$1,000,000 annually.

FRUIT IN NIAGARA COUNTY, N. Y.—This county, it is well known, is one of the best fruit regions in the Union, owing largely to the protection from the severity of north and northwest winds by the open waters of Lake Ontario. The following figures of the amount of the fruit crop in the county in 1879, were given by C. L. Hoag of Lockport, at a meeting of the Western New-York Horticultural Society: The apple crop amounted to 300,000 barrels, which sold at an average of \$1.60 per barrel, making \$480,000; 120,000 bushels of second class and windfalls, sold for drying at 20 cents per bushel, \$24,000; the peach crop, the largest ever known in the county, amounting to over 250,000 bushels, sold at an average of 40 cents, \$100,000; 458,000 pounds of cherries brought 3 cents per pound; pears, plums, berries and other fruits made up the entire amount received for fruit to \$665,000.

CULTIVATING ORCHARDS.—J. W. Gray, in his report for Orleans County, N. Y., to the Western New-York Horticultural Society, furnished some interesting facts on the management of orchards. One belonging to S. Bragg, set out in 1862, bore 8 barrels the fifth year, 20 barrels the next year, and after that an average of 85 barrels annually. It was seeded to clover in 1877, and the next year the product fell to 18 barrels. It was next sown with buckwheat, with no improvement. In 1879 it gave 225 barrels, and the owner thinks that in future he shall give it clean culture. Another orchard set the same year with trees from the same nursery, has had grain in it every year, and "the fruit," says Mr. Gray, "has never amounted to anything." An orchard of 100 trees set in 1867 was treated similarly, and bore well until clover was sown on it in 1878, and as a consequence in the fall of 1879 it gave the smallest crop it had ever borne. Mr. B. finds cultivation without manure much better than manured grain crops.

One of the best fruit cultivators in Berrien County, Mich., (on the east shore of Lake Michigan,) says his orchards are not permitted to bear any other crop but the fruit after the third year. The first three years he cultivates hoed crops. He finds the fruit improving both in quantity and quality. He states that no improvements put upon land add so much to the value of farm property for selling purposes, as well cultivated orchards. His peach trees netted one year, above the cost of gathering and marketing, over \$400 per acre. So much for good management. It may be objected that such statements are of exceptional cases. This is true, and equally so of exceptional treatment. The best reports of the kind which we can make are of well earned success—either from well selected locality,

properly chosen varieties, good culture and thinning, careful and skillful packing, and a good selection of markets.

We observe in the various reports of the horticultural discussions at the West as well as the most eastern parts of the Union, a nearly universal voice in favor of the clean and thorough cultivation of young orchards for several years after planting. In the more fertile regions, this is followed by seeding to grass and closely grazing after the trees attain good size; in other cases the cultivation is continued. Hoed crops only are allowed. Sheep and swine do much toward the extermination of insects.

At a meeting of the Pennsylvania Fruit Growers' Society, Christopher Shearer, a thorough cultivator, gave in substance, among other items of his practice, the following: He said the high culture or manuring needed for the pear might ruin the cherry. He finds cultivation essential to good orchard fruit. Plant potatoes, cabbages, beets, &c., and avoid grain and grass. Suffer no grass to grow, and destroy weeds. Peach orchards should be plowed, manured, and treated with lime and ashes. He keeps the yellows out by promptly digging up and burning infected trees. He would not run a cultivator under a diseased tree, fearing it might carry the disease to healthy ones. His remedy for the borer is a mixture of three gallons of strong whitewash, two of strong lye, two quarts of clay, and three quarts of cow droppings. The mixture is applied with a whitewash brush from branch to root. The clay and cow droppings in the mixture prevent the lime from cracking open when it dries, and admitting eggs in the crevices.

**LEAVES AND FRUIT.**—The absolute necessity of leaves in developing fruit is becoming well understood by cultivators, but we still see some blunders committed by those who do not fully understand the office of these organs. The owner of a vineyard concluded he would have better grapes than his neighbors if he turned the full rays of the sun on the forming and ripening bunches. He cut off most of the shoots above the bunches, and thus removed two-thirds of all the fully grown foliage. The consequence was the grapes were nearly worthless, and the vines were ruined. It is the foliage and not the fruit which wants the sunlight. Another instance: A tree of the Yellow Gage plum dropped its leaves from leaf-blight when the plums were only two-thirds grown, and with only a bitter flavor. The branches were quite bare for some weeks, and the fruit was stationary. A new set of leaves then came out, the plums finished their growth and ripened into the honeyed sweetness peculiar to that variety.

**EARLY BEARING FRUITS.**—Strawberries will come first, an early set bed of which will afford a few the first year, and an abundance the next. Raspberries and gooseberries will bear lightly the second year, and more afterwards. The same may be said of some of the most prolific grapes, as for example, the Hartford. Dwarf pears, of such abundant bearers as

Louise Bonne of Jersey, will begin to give fruit the third year, and so will the peach in favorable localities. The currant should be planted freely; an abundant supply will hang on the bushes a month, improve in quality, and prove of much value. Some sorts of the pear, as Bartlett, Summer Doyenne, Howell, &c., bear much sooner than other sorts. A good supply of tomatoes, melons, &c., should be secured for the first and all subsequent years.

**PACKING DELICATE FRUITS.**—A writer in the Gardeners' Chronicle gives some good suggestions on the best material for packing delicate or costly fruits for conveyance. He specially recommends dry moss, as having sufficient elasticity, and never heating in masses. A careful use of bran may answer, if packed very tight; but it has a tendency to shrink in bulk when shaken on a journey, and when this is the case, the whole contents may settle, and all the fruit be soon spoiled. Cotton is one of the worst of materials, as it absorbs moisture and becomes wadded together. Small boxes are, of course, better than large ones, as whatever side they are turned upon, a heavy weight is thrown on the lower stratum. The time in the week is important; never send later than Friday morning for a 24-hour transit.

**A GOOD FRUIT HOUSE.**—Judge Sitzel of Reading, Pa., gave a description of a fruit house at a late meeting of the Pennsylvania Fruit-Growers' Society, substantially as follows: It was built with a capacity for 4,000 bushels, and has been in successful use since 1868. It is 50 feet square and 28 feet high, and is built of stone. The fruit room, 8 feet high, is on the first floor, enclosed with a 4-feet space on the four sides, filled with ice from above. The ice-house proper is in the second story, 11 feet high. A foot of sawdust is placed between the ice and outer walls. The floor is water-tight, with pipes to carry the water beneath the building. The third story is to secure ventilation, and has a non-conducting substance above. A space 3 feet deep, below the fruit room, is filled with the surplus ice that remains in the second story, before putting in the fruit in autumn. Four box ventilators a foot square, with valves, lead from the fruit room through the ice-room to the space in the upper story. The fruit is stored in boxes of two bushels each, the bottom of one forming a cover to the one below, and they are placed in tiers, to admit circulation of air and passage. Double doors, lined with hatters' waste wool, afford admittance. The cost was \$2,000, and 1,000 tons of ice are required to fill it. The owner has obtained a handsome profit on the investment by keeping fruit. A smaller and cheaper house might be built on a similar plan, but the use of ice will always involve considerable expense.

**ZINC LABELS.**—The horticultural journals occasionally recommend the use of zinc labels for marking the names of trees, the zinc to be written on with a common lead pencil, retaining the name for several years. But the punching and wiring on with copper, which are also recommended,

are quite needless. Cut the strips of zinc half or three-fourths of an inch wide at one end, and half that width at the other, with a length of about five inches, and they may be readily attached to a small branch by winding the narrow end twice around the branch, and nothing more. As the branch grows, the zinc expands by uncoiling, and no harm will be done by cutting into the bark, as is so common with wired labels.

**DRIED FRUIT IN ENGLAND.**—A writer in the London Garden says that the dried apples and peaches received from America are excellent in quality, and that this mode of disposing of surplus fruit has the advantage of canning in cheapness and in cost of conveyance; and that the drying process is carried on to perfection in America.

**CANKER WORM.**—The Western New-York Farmers' Club went into a discussion on the best means for eluding or destroying this insect, as reported in the *Rural Home*, and the following information, although not new, is given for the benefit of those not familiar with its treatment; D. E. Rogers wrapped cheap paper around the trunks early in April, and covered it with common tar. He bought mismatched wall paper for five cents a roll, sawed the rolls in two, and tacked them around the trunks. He thought this cheaper than spraying with Paris green. Mr. Reynolds said the tar hardens, and should be watched and applied again fresh to prevent the worms bridging it. It is necessary to apply Paris green to those worms which escape and ascend the tree. Mr. Reed said pine tar is safe to use, but coal tar sometimes destroys the trees. Mr. Ross said that coal tar might be put on old trees with dry, thick bark, without paper, but on young trees it is certain death. The worms bridge it over in a few days and it must be applied again.

**BARK LOUSE.**—A practical writer says the best remedy for this insect consists in boiling leaf tobacco in strong lye until reduced to a pulp, and and then mixing enough soft soap to make the whole like thin paint. It is not easily washed off.

**TOBACCO FOR THE CurrANT WORM.**—The Practical Farmer gives this remedy: Make a strong decoction of tobacco by boiling in a covered vessel. Apply the liquid, when cold, with a watering-pot. Repeat the operation whenever a new crop of the larvæ appears.

**ACRID SUBSTANCES AND DEPREDATORS.**—Acrid or poisonous substances, which often injure plants when coming in contact with them, may be employed to destroy or repel insects or other depredators. Gas tar, applied with a swab or a pole to caterpillars' nests, kills every caterpillar which it touches. It drives ants away when put in their holes. Mice dislike it when put into their holes. A quantity poured into wasps' nests is an effectual insecticide. The acrid character of gas lime is said to repel the turnip fly, when sprinkled in fine powder over the plants. The codling moth and canker worm can be destroyed by showering the trees with a thin solution of London purple (which mixes better with water than Paris green), the work being done just as the apples are forming.

## DOMESTIC ECONOMY.

THE FOLLOWING RECEIPTS, furnished from time to time by numerous correspondents of the *COUNTRY GENTLEMAN* in all parts of the country, have been carefully selected and condensed for publication in the present form:

**HOP AND POTATO YEAST.**—Cut up two pounds of pared potatoes, put them in a large saucepan, pour over them three quarts of water, and boil; before the potatoes are sufficiently cooked, add a good heavy half ounce of hops, tied up in a very thin cotton bag, (if hops boil too long, they make the bread very bitter.) In a large kitchen bowl put a pound of sifted flour, two large heaping tablespoonfuls of white sugar, one large heaping tablespoonful of salt, and a tablespoonful of ground ginger. When the potatoes are soft enough to mash through the colander, put the hop bag into a pitcher, and pour over it all the potato and hop water; pour one quart of the *boiling* potato and hop water over the flour, &c., and give it a good mixing; then mash the potatoes through a colander into it, using the second quart of boiling potato and hop water to soften the potatoes through the colander. If you do not have two quarts of potato and hop water, pour some boiling water over the hop bag, and squeeze. The flour must be thoroughly cooked with the boiling hop water, and you must mix it well, and rub it smooth of all lumps. To prevent the yeast chilling too soon, have the big bowl, pitcher and yeast crock heated before using. It should never be thinner than will just pour, but if you think it necessary you can use a little more than the two quarts of hop water; two quarts are generally sufficient. Place the colander over the yeast crock, and strain your yeast into it. Many do not think this necessary, and only mix it in their yeast crock. When a little more than lukewarm, add a large coffeeecupful of yeast, stir it frequently, and keep it in a moderately warm place for 24 hours, then put it in the coolest and darkest part of the cellar. Use a two or three gallon earthen crock, (tin, glass or stoneware chill too soon,) with a lid fitting well to the rim.

**TO PREVENT FLOUR FROM SOURING.**—Take out from the barrel or sack a small quantity of the flour, say 25 or 30 pounds, or a little more if you can conveniently do so, loosen the remaining portion so as to make it quite light in the barrel or sack, and keep in a dry apartment. Compactness and moisture are the only causes of souring.

**HOME-MADE BREAD.**—A correspondent of the *Deutsche Landwirthschaftliche Press* gives a hint on bread-making. It is well known that dough when well kneaded and of firm consistence gives a whiter and lighter bread than under opposite conditions. But the most important point of all is the previous sifting of the flour through a sieve, so that every portion of it may be brought into contact with the oxygen of the

air. A dough made of sifted meal mixes better with both water and yeast, rises better, and requires far less kneading than when the flour has not been sifted, and the bread obtained from it is lighter and in every respect of superior quality. The longer flour may have lain aside before being used, the more necessary is it to subject it to the operation.

**BREAD AND DOUGHNUTS.**—For two medium loaves use a pint and a half of new milk, two-thirds of a cupful of good potato yeast, and as much flour as can be stirred in with a spoon. This forms the sponge, which, when sufficiently light (usually after standing through the night), must be moulded up as quickly as possible, adding sufficient flour to stiffen, so it can be lifted in the hand and put in the tins; set in a warm place until light, then be baked without further kneading.

For doughnuts, take half the above quantity of sponge and when light, as for bread, add two eggs, one cupful of sugar, half a cupful of lard, half a teaspoonful of salt, and a little grated nutmeg. This is thoroughly mixed by the hands, adding a little more flour, then break off small pieces and mould them until round; lay them on the moulding board (which has been previously sprinkled with flour) when they are left near the fire covered with a cloth for about four hours, and then boiled in the usual way. If boiled quickly they absorb very little fat and when rolled in sugar form a delicious article. If made on bread days, so that a little sponge can be reserved for them, they are made with comparative ease.

**BREAD FROM SMUTTY WHEAT**—Can be made by using some sour milk whey instead of water, and adding a good-sized potato for every loaf. The whey is obtained by scalding "loppered" milk and removing the curd. No more saleratus is needed than if water is used, while the bread is much whiter and lighter.

**STALE BREAD.**—Take one loaf at a time, as wanted; put it into a steamer well covered, and let it steam for an hour; then put it in the oven (not hot enough to burn it) for about a quarter of an hour, to let the crust become a little dry and crisp. Bread eight days old, treated in this way, has been made as fresh and delicious as the first day it was made.

**BROWN BREAD, BAKED.**—Take one quart of sifted corn meal and three pints of unsifted rye meal, add one heaping teaspoonful of salt and one small teacupful of good molasses. Mix to a stiff batter with buttermilk, using enough soda to sweeten it. Pour into greased tin pans, and bake in a pretty quick oven till done. You can tell when done by running a broom straw through the loaf. Cover the bread with other tins as tightly as possible. Be careful and not burn. Allow the oven to cool off as the bread gets nearly done.

**BROWN BREAD, STEAMED.**—Two teacupfuls of sweet milk, two of sour milk, two-thirds of a cupful of molasses, one tablespoonful of soda, and a little salt. Thicken to a soft batter, with half corn meal and half

shorts or Graham flour (shorts are best). Steam three hours in a two-quart pan, and bake 20 or 30 minutes. This is excellent with baked beans.

**GRAHAM BREAD.**—Take half a cupful of molasses, three cupfuls of sour milk, a little salt, two teaspoonfuls of soda; stir in flour until quite stiff; bake one hour in a moderate oven. This will be found a much quicker way than by using yeast.

**CORN BREAD.**—One quart of buttermilk, (sour milk can be used, but more butter must be added;) two tablespoonfuls of melted butter; two eggs well beaten; a little salt; one tablespoonful of sugar; one small teaspoonful of salsaratus dissolved in a little boiling water, boiled up for a minute or so. Sift the meal, and add enough to make a batter as thick as for buckwheat cakes. Bake in square or round pans about an inch in thickness, for half an hour, in a very hot oven. It is delicious for breakfast or tea, and can be made of yellow or white meal.

**CORN PONE.**—Take five pints of sifted meal, pour on boiling water sufficient to scald the meal thoroughly; let it stand until almost cold; then add a little salt, one cupful of flour, one-half cupful of molasses, and one cupful of good yeast. Make a rather stiff batter and let it rise. When light it may be too thin; if so, stir in more flour; then place in a deep pan to bake. Do not let it rise again. Bake two hours with a slow fire. This may be eaten warm or cold.

**GRAHAM GEMS.**—To one pint of flour add one egg, half a teaspoonful of good baking powder, and sufficient thick sweet cream to make a stiff batter. Put into hot muffin or gem rings, and bake in a hot oven. The above receipt will make six gems.

**GRAHAM BISCUITS.**—To a quart of graham flour add sufficient thick sweet cream to make a stiff dough, beat until light, and bake in a moderately hot oven.

**SODA BISCUIT.**—Before you begin, make a good hot fire, so that the oven may be just right. It should be hotter than for bread; if they do not bake in a few minutes, they are not good. Despatch in making and baking is as essential to a light, puffy biscuit as is soda or baking powder. Make your biscuits quickly; the sooner they are in the oven after the milk touches the other ingredients, the better they will be. Remember to mix as soft as can possibly be handled, and do not knead them. Handle as little and lightly as you can. In fact, the secret of a good biscuit depends on three things—be quick; roll soft; have the oven just right. The only rule for the quantity of milk is to mix as soft as you can possibly roll it out, or only enough for a very soft dough. Before you begin have your pans ready, also cutter, rolling pin, &c. Sift your flour and measure off one quart; mix dry through the flour two rounded teaspoonfuls of cream tartar; chip up into little bits a piece of butter the size of an egg, also add a pinch of salt. Measure off a teaspoonful of soda (a little smaller spoon than for cream tartar); dissolve it thoroughly in a little

sweet milk or boiling water, so that there may be no possibility of having your biscuit discolored with little yellow specks of soda through them. Biscuits require only a few minutes to mix and prepare for the oven after you have got the things together. Put the flour and cream tartar into a bowl; rub in the butter and salt; add the soda; mix with a spoon, adding sweet milk enough for a very soft dough; roll, cut and bake immediately in a very quick oven.

Baking powder biscuits are made in exactly the same manner, only using the powder instead of soda and cream tartar, in the dry flour before wetting.

**TEA BISCUIT.**—Sift four pounds of flour into a large wooden bowl; make a cavity in the centre of the flour, and stir in slowly one pint of lukewarm milk, with half a pint of good yeast, using just enough flour to make the yeast and milk into a batter of the consistency of rich cream. Cover this over and let it stand for two hours; then cut up one pound of good butter into one pint of warm milk, with a little salt; now mix all the ingredients together, work well, dust the top with flour, and let it stand one hour, after which make the dough out into biscuits, about the size of an egg; butter the baking tins and lay the biscuits in rows about three inches apart; place in a warm situation to rise, and as soon as light, bake them to a nice brown, in a hot oven; as soon as they are taken from the oven wash over the tops with a soft brush dipped in milk.

**RAISED BISCUITS WITHOUT MILK.**—Make a dough precisely as you would for raised bread, when well risen stir down and set away until wanted. Then dip a tablespoon into a dish containing soft lard or butter, or a mixture of half lard and half butter (soft, but not melted), and take a bit of dough from the batch into the palm of your hands, and with your fingers manipulate it into a biscuit, dipping your fingers into the dish of shortening as you work, thereby inserting it into the dough in such a manner as to make the biscuit flaky. Place one by one upon a flat baking tin, and set in a very warm place to rise, which will take nearly half an hour. Then bake in a moderately hot oven. You can keep the dough on hand all the time by making up two or three times a week. Keep in as cool a place as convenient without freezing.

**CREAM MUFFINS.**—Take one cupful of sour cream, a teaspoonful of saleratus, one egg, and flour enough to make a thick batter. Bake in rings on a griddle iron.

**SWEET RUSKS.**—One quart of sweet milk, three tablespoonfuls of yeast, and flour to make a thick batter; let it rise over night, and in the morning add one cupful of lard or butter, (if the former, salt must be used,) rubbed to a paste with one cupful of white sugar, and three eggs, reserving the white of one egg to beat to a froth with a little sugar, and brush over the tops of the rusks when done. Mix with flour to make a stiff dough; make it into small balls; let it rise very light, and bake.

**PLAIN BUNS.**—One and a half pounds of flour, five ounces of butter,

the same of pounded sugar, and one ounce and a half of German yeast; set a sponge with the yeast, viz.: Mix it with a little tepid water and a little flour, for a quarter of an hour. Then add the sponge to the above mixture, work it smooth with your hand, and replace it in the basin to rise for about two hours; mould them into the form of balls; place on slightly buttered baking sheets; prove them light, and bake off in a sharp oven.

**BATH BUNS.**—Half an ounce of German yeast made into a sponge as for plain buns, half a pound of flour, quarter of a pound of butter; mix the whole lightly together with six yelks of eggs and a little milk. When proved and ready, work in one-quarter of a pound of rough broken loaf sugar; lay them out on a buttered baking sheet in the shape of a rock, put a few comfits on the top of each, and bake in a sharp oven.

**CINNAMON BUNS.**—One cupful of butter, three cupfuls of sugar, four eggs, one cupful of sweet milk, four cupfuls of flour, three teaspoonfuls of baking powder. Bake in two shallow pans, and when baked spread the top with butter, after taking out and placing on a platter; then sift cinnamon and sugar over, while hot, and place the pans they were baked in over them. This steams the cinnamon in and makes them excellent.

**INDIAN MEAL PANCAKES.**—Beat four eggs, add a little milk, and form into a paste with ten spoonfuls of Indian meal; add nearly a pint of milk and one teaspoonful of baking powder; work smooth, and fry, rolling them up with butter, sugar, nutmeg and lemon juice.

**RICE FRITTERS**—Two cupfuls of cold boiled rice, one cupful of sweet milk, three eggs, eight tablespoonfuls of flour, half a teaspoonful of baking powder, and half a teaspoonful of salt. Put two tablespoonfuls of lard into a pan, and when very hot fry the fritters to a nice brown, putting a tablespoonful and a half of batter into each cake.

**BUCKWHEAT CAKES.**—To have good, wholesome, light buckwheat cakes, you must get the very cleanest and nicest buckwheat—that free from all grit and dirt. Take one-fourth of granulated wheat flour, or one-fourth of oatmeal flour, to three-fourths of buckwheat. Make a batter of these with tepid water and a little salt, using any good lively yeast. Just before baking, add one spoonful or more, according to the quantity made, of molasses, and a small even spoonful of soda or baking powder. The half of a yellow turnip is an excellent thing to rub your griddle with, instead of a piece of pork or any other fat; obviating all the disagreeable odor of the griddle.

**HASTY PUDDING.**—Put three pints of milk to heating in a stew-pan or kettle; then stir smooth in one-half pint of milk, five large spoonfuls of flour, and beat three eggs in another bowl. As soon as the milk boils, (it will heat faster than water,) stir in the batter, having previously added a little nutmeg and salt to taste. If over a brisk fire, it will cook in a moment, and then the eggs should be turned in and stirred briskly half a minute. Remove from the fire and dip into saucers, and before it has

cooled sufficiently to form a scale over the top, grate on a trifle of nutmeg, to improve the appearance. Serve with sugar.

**OATMEAL FLOUR BLANC MANGE.**—Into one quart of slightly salted boiling milk stir in two and a half large tablespoonfuls of oat flour, adding a piece of butter and a tablespoonful of sugar. Boil for twenty minutes, and turn into a wet mould, or it may be eaten warm. Cream and sugar form the best sauce. This is good for invalids or infants, being light and easy of digestion.

**PACKING A PIG.**—None but an absolutely clean barrel should ever be used. It does not pay to run any risk with pork. A barrel can be continually used if properly cleaned each time, but in no case should a syrup or molasses barrel be taken. It is a custom in the Far West where packages of all kinds are scarce and cooperage high, to clean kerosene barrels by continuous soaking for some months, and they are said when clean to answer the purpose.

The curing of meat is not more uncertain in the hands of a practical farmer than in a great packing-house; indeed, there are many reasons why the farmer has decidedly the advantage. The curing of mess pork, or ordinary salt pork, is simple; but no point must be overlooked, or the result will be either entire loss or a damage to the quality. Except in extraordinary cases, for family use none but clear or nearly clear pork should be salted. After the hog is killed and hung up, split him down the centre of the back-bone; remove the lard; cut off the hams and shoulders; divide the side into two pieces laterally, cutting about midway; cut out the back-bone and spare-ribs to use first, leaving, on the fat portion of the back, as much lean meat as you desire. This part of the back of the hog is all that is suitable for salt pork. Cut it crosswise in strips of equal size; then take each piece and rub it over with fine salt; lay it on a bench on which a layer of fine salt has been spread; pile the pieces in regular order, and sprinkle each layer with fine salt, covering the whole reasonably well.

Let the pork remain a day or two, and the salt will draw all the blood out of the meat. Then rinse each piece; put an inch of salt in the bottom of the barrel; place the pieces of pork with the rind to the side of the cask, making a circle, and so on, circle within circle, compactly and firmly placed, until a layer is finished; on this put enough salt to fill all depressions, and cover an inch deep besides. Continue this process until the work is done, ending with a good layer of salt. Let the meat remain in this condition not less than two weeks (more time will be needed if the meat is in a cold place), and then put a good weight on it, and cover it not less than three inches deep with brine that will float an egg so that a good space on its shell will be out of the brine. If the salt is good, the pork will keep for years, and always be sweet. One can easily destroy the flavor of the whole by allowing small pieces to float around on top. If Turk's Island salt is used, it will be best to make a brine to cover

the meat, instead of water; but in no case neglect the salt as before directed.

The hams, shoulders and flank or belly part (the latter makes the breakfast bacon of commerce) of the hog should be cured in sweet pickle, or rather be made into bacon. For this purpose a syrup or molasses barrel is probably as good as any, and the same rule given before concerning the pork barrel applies as well here; or the same barrel can be used repeatedly as long as kept clean, but never after having been used for any other purpose. For 100 pounds of meat take 4 gallons of water, 6 pounds of best salt,  $2\frac{1}{2}$  ounces of saltpetre, and  $1\frac{1}{2}$  pounds of New-Orleans sugar, or its equivalent in molasses. Boil and skim, and apply when cold. It is quite as well to draw the blood from the meat by a day or two of dry salting, as described for salt pork, but as meat should never be kept in this pickle long in hot weather, this is not essential. Keep the meat in this pickle for at least four weeks, and if the pork is heavy, at least six weeks, deducting any time that the package has been frozen, or in a place where it was as low as freezing point. Then dry and smoke to suit taste. Wrap each piece carefully in paper, enclose it in a muslin bag, and hang in a dry, cool place.

**CURING HAMS.**—To six gallons of water, add nine pounds of salt—half coarse, half fine—three ounces of saltpetre, three pounds of brown sugar, one pint of molasses, one heaping tablespoonful of saleratus. Boil all together, and skim. Let it stand till cold, then pour over the hams, which have been rubbed with a little fine salt, and packed in a barrel. Let them lie in the brine five or six weeks, after which drain and smoke.

The same preparation is used for pickling beef. A pork barrel will answer for pickling beef, but after being once used for this purpose, must never again be employed as a pork barrel. Many losses occur from ignorance of this fact.

**A DRY PICKLE.**—Those who have only a few hams to cure, or lack barrels for holding brine, will find the following method nearly as good as the other: For 150 pounds of meat, take  $1\frac{1}{2}$  ounces of saltpetre, four quarts of fine salt, with enough molasses to make a paste. Rub well with this mixture on the flesh side; let the hams lie four weeks; then smoke two days. Remove from the smoke-house, and paint with black pepper and strong vinegar.

**KEEPING HAMS.**—Make bags of double paper (newspaper, or use singly the heavy brown paper flour sacks), making them large and loose for the ham; tie them, a little above the meat, very securely and tightly around the strings or hooks by which they are suspended. Instead of strings, if practicable, have old-fashioned pot-hooks, eight inches long or thereabouts, made of small, round iron, or very heavy wire. These are always ready, and if carefully cared for, may last a hundred years. For this way of keeping smoked meat, a dry place, free from rats and mice, is requisite. In a damp place, mould will gather; and in a hot attic, while

the meat will keep perfectly sweet, it is apt to get too hard for convenience of cutting. Double paper will keep out insects if no holes are allowed. Similar bags are excellent for dried fruit.

**HAMPSHIRE BACON.**—Procure a shallow, wide tub; any clean tub will do, but a wide one, in many respects, is best. For convenience the tub should not be more than half as deep as an ordinary sized pork barrel—a molasses barrel cut down is one of the best and cheapest, but a little narrow. Make a brine strong enough to well buoy up an egg. To each peck of salt add two ounces of salts of prunella (refined saltpetre) and from one to two pounds of brown sugar, or the same quantity of good molasses. The sweetness is to be regulated according to the taste of those who are to eat the pork or bacon. Allow the meat to remain in the pickle about six weeks or so; then if dried bacon is required, take out and let it drip. Then if you wish for smoked bacon, smoke in the ordinary way, using clean, dry corn cobs. If you do not wish it to be smoked, hang in any warm, dry place you please. When dry (if not smoked), rub all over with dry wheat flour, wrap in old newspaper or cloth when dry enough, and put in an airy, dry place. Instead of scalding a bacon hog in Wiltshire and Hampshire, they roll the dead hog in a lot of clean, dry straw, and burn off all the hair or bristles. The meat can remain in the pickle, if so desired, and be used from the barrel as in ordinary pork, care being taken not to allow the brine to sour. Taste occasionally, and if any change is noticeable, take out the meat, boil and skim the brine, and when quite cold, replace the meat.

**MUTTON HAMS.**—Take the hind or fore legs of a sheep, and rub them with the following: Mix two tablespoonfuls of sugar with the same quantity of table salt, and half a tablespoonful of saltpetre. Place the hams in separate pans, and rub each one with the same quantity. Turn twice a day for three days, and rub thoroughly with the hand at each time, turning away the liquor which flows from the meat. Then make a new mixture, and turn and rub daily for ten days. At each rubbing take care to leave that side uppermost which was under before. Then smoke the hams like those made from pork, and boil in the same way.

**HAMBURG PICKLE.**—Take one gallon of boiling water, one pound of common salt, one and a half pounds of brown sugar, and two tablespoonfuls of saltpetre. Add to this half a pint of vinegar. Simmer until all the ingredients are dissolved. Pour over the meat boiling hot. In two or three hours it will be ready to smoke.

**FRIED PORK.**—Slice the pork a trifle over half an inch thick; put it into cold water to freshen. Before the water is scalding hot (set it, of course, on the top of the stove, in the spider or frying pan, to heat) take the slices of pork out to drain, empty the water out, and set the pan back on the stove. When it is dry, spread your pork around on the bottom, and let it fry slowly. Take a fresh laid egg, and beat it lightly in a pint

dish, add a teacupful of sweet milk, and stir in flour to make a stiff batter, beat it well; no salt or soda to be used. Turn the pork over so both sides will be a light brown. With a fork dip the slices separately into the batter, and lay it back in the hot gravy; turn the slices over, so that each piece will be cooked; then lay them on the platter, and what batter remains drop into the pan and fry like griddle cakes. When cooked, lay upon the platter with the pork; turn the gravy or lard that remains, on the side of the platter, not over the top of the batter, and serve hot. No one will ever speak slightingly of fried salt pork after eating it cooked in this manner.

Another good way to fry pork is to freshen it in the same manner, and then roll the slices in sifted corn meal, being particular to cover the entire surface of each slice with the meal. Put it in the frying pan, and let it cook slowly, turning it occasionally, till the whole surface is a bright golden brown.

**BOILED CORN BEEF.**—This is much improved if cooked in plenty of water, and when thoroughly done, left until cold in the same water that it was boiled in. Lift the pot off the fire, and let pot, water and meat grow cold together. This will make it much more moist and juicy, besides tender and sweet, than if taken out hot, and all the moisture in it dried out by standing and steaming until it grows cold. Hams, tongues, &c., should be cooked in the same way.

**SAUSAGE.**—A good way to cook sausages is to boil them first in water in a frying pan; then encasing them in a covering of plain pie-crust, bake them until they are done. You may make a gravy, if you like, out of the water they were boiled in, adding browned flour, a small piece of butter, and a little summer savory.

**VEAL SAUSAGE.**—Chop small equal parts of veal and salt pork. Season with pepper and sweet herbs, mixing all well together with the meat; tie in a cloth and hang it in a cool, dry place. When about to use it make the sausage into cakes, flour them, and fry in hot lard.

**LEBERWURST.**—Too often this is made with liver as the principal ingredient, which gives it a dry, woody taste. The aim must be to get together a variety of swine meat, and add only sufficient liver to flavor the mass. Put tongue, heart and some fat loin pieces, and about a fourth part of liver, into a pot, and boil slowly till done tender. Cut in smallish pieces, so as to show distinctly in the mass, avoiding fine hashing, except the liver, which reduce to a fine pulpy consistence. Season lightly with pepper and salt and mix well, stirring carefully—the whole operation to be done as soon after the pot is removed from the fire as the hands will bear the heat. Then set away to cool. Warm well as wanted for the table and add a little seasoning if desired. It is excellent only when fresh, and should be kept in a cool place. Baked sour apples taste well with it. Some prefer raw sliced apple warmed up with it; this requires more heat and longer time, crisping the mass a little where

it comes in contact with the griddle. It makes the wurst more palatable when age has detracted from its quality.

**CALF'S HEAD CHEESE.**—Boil a calf's head in enough cold water to cover it, after you have let it lie in clean hot water to soak for an hour. Add salt; this will send the scum to the top of the water, which must be taken as fast as it rises. Let it boil gently until done, or until the meat leaves the bone, when take it up, dividing the meat from the bone. Season with salt, pepper and sweet herbs, and a little grated nutmeg if liked. Place in a deep dish or basin, putting a plate and a gentle weight over the top of it. When cold it will be nice sliced for supper, or sandwiches.

**JELLIED CALF'S HEAD AND HAM.**—Chop the meat when it has been boiled until it will slip from the bones; season with pepper, salt, allspice and the juice of lemon. Chop half as much raw ham, fat and lean; butter a bowl; line it with slices of hard-boiled egg and fill with layers of calf's head and ham alternately, moistening each layer with a little of the liquor from the calf's head; fill nearly to the top; then pour in all the liquor that will soak in; cover with a paste of flour and water stiff enough to mould, and bake in a hot oven one hour and a half; remove the paste when the dish is cold, and serve in thin slices. It must be made the day before it is used.

**JELLIED VEAL.**—Cut a knuckle of veal into three pieces; place it in boiling water and keep on the simmer until the bones will slip out; chop the meat fine and strain the liquor in which it was boiled; then season it with salt, pepper, allspice and onions chopped fine, and boil it again until there is not much over a pint. Place the chopped meat in a mould; turn the liquor over it; let it stand over night and serve in thin slices, garnished with sliced hard-boiled eggs and bits of parsley. The juice of a lemon will improve the jelly, and the peel can be grated into the meat for a seasoning, which will be preferred to the allspice by many persons.

**PRESSED VEAL.**—Take eight pounds of veal; hash the meat; three eggs beaten, pepper and salt, and nutmeg to taste; add three tablespoonfuls of butter melted. Roll eight crackers; mix half with the meat; the other half to be put on the outside. After making the meat in a form, bake two or three hours, basting with butter. Half fill the pan in which the loaf is baked, with water when it is placed in the oven.

**ROULADE OF BEEF.**—Have the butcher cut you a round steak, one inch thick, which you must again cut with a very sharp knife into four thinner slices. Divide one pound of sausage meat into four parts. Roll each part in one slice of the beef, and tie it tight with thread to prevent the sausage meat from coming out. When your rolls, or roulades, are made, put on the fire a small porcelain lined kettle in which is a small piece of butter, four slices of pork, two carrots and two onions. When the butter is melted, put in the roulades and let them brown, then add

boiling water to hardly cover them; salt, pepper, one clove, and parsley if you have it. Let the whole cook slowly for three hours. Before you dish, take the fat off the gravy, and add a teaspoonful of dissolved corn starch to thicken it. If there is not enough gravy, add a little more water and let it boil up. This is an economical and delicious dish.

**BROILED SWEETBREAD.**—Parboil and rub well with butter; then split open the sweetbreads and broil them on a gridiron, putting them every three or four minutes into melted butter, so as to baste them well; season with salt and pepper; when well browned, serve very hot.

**BAKED CHICKEN PIE.**—Line a deep dish with a moderately thick paste. Having cut up your chickens, and seasoned them to your taste with salt, pepper and (if you like it) mace and a little grated nutmeg, put some pieces of cold ham between the chicken, and if you have some oysters you will find them a great addition to your pie; also a few yelks of hard boiled eggs. Fill the dish two-thirds full of cold water and pieces of butter rolled in flour. Put the top crust on, cutting a hole in the centre of it. Cut out of the paste some handsomely shaped leaves, which you must lay around the edge of your pie. You may also form a rose to lay in the centre.

**CHICKEN FRICASSEE.**—Cut up the chickens and wash well in salt water; put them in a pot, with enough cold water to cover them; add (for two chickens) half a pound of salt pork, cut up in thin strips; cover, and let heat very slowly, then stew until the fowls are tender. Cook slowly; if they cook fast, they toughen and shrink. When almost done, add, if desired, a chopped onion or two, some parsley and pepper; cover again, and, when it has heated to boiling, stir in slowly a teacupful of milk, containing two beaten eggs and two teaspoonfuls of flour; boil up again, and add one tablespoonful of good butter. Arrange the chicken nicely in a deep dish, pour the gravy over and serve hot.

**FRIED CHICKEN.**—Have some lard very hot; sprinkle the pieces of chicken well with flour; put them in and cover tightly for a while; cook as fast as possible without burning. After a little while take off the lid; season with salt and pepper, and if brown, turn the pieces and brown again as fast as possible. We think the meat is more tender and much more juicy than if allowed a long time over a slow fire.

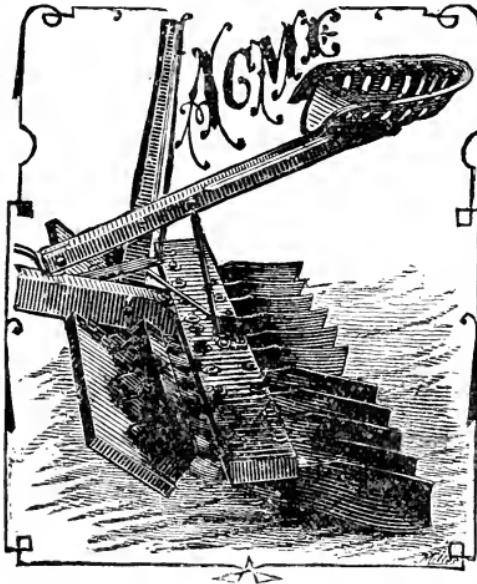
**CREAM PASTRY.**—To a quart bowl of sour cream, add one and one-half small teaspoonfuls of saleratus or cooking soda, dissolved in two tablespoonfuls of boiling water, and allowed to boil up for a minute or two. Beat it into the cream, and as soon as it foams, stir in one quart of flour that has just been sifted. Add enough sifted flour to roll out very soft. Be very careful not to mix it up stiff, but put in only enough flour to keep it from sticking to the fingers and rolling pin. If richer pastry is desired, bits of butter or lard can be rolled into the paste.

# "ACME"

## PULVERIZING HARROW,

CLOD CRUSHER

AND LEVELER.



Extract from a letter from Mr. J. J. THOMAS.

UNION SPRINGS, CAYUGA CO., N. Y., Oct. 21, 1879.

Gentlemen: I have just made a trial of the "Acme Harrow," and find it an admirable implement for its intended purpose. Its chief distinctive excellence is in finely pulverizing the surface down three or four inches or more, more perfectly than either the Shares or the Disk Harrow, while the width of its sweep and the ease of draught are strong recommendations. We are now suffering from an almost unprecedented drought, and our strong soils are like a brick pavement, where not disturbed since Spring. These yield to it to some extent; and when I had potatoes dug, a month ago, with undisturbed soil between the rows or drills, it cut in the full width of the teeth, and two or three passings reduced the soil to the condition of ashes. When the driver rides it is not hard for the two horses. It is out of the question now to invert sod for trying it. As soon as the hard surface is softened by rains, I shall try it on the inverted turf; but I can judge by what I have already seen, and by an acquaintance with Shares Harrow, that it will put the sod in excellent condition. Going over the sod twice, and taking, as it does, six feet to a passing, one pair of horses will prepare several acres in a day. I think it will supersede both Shares and the Disk Harrows. Yours truly,

(Signed)

J. J. THOMAS.

While it is invaluable for all purposes where a harrow is needed, it is PECULIARLY ADAPTED TO HARD CLAY AND INVERTED SOD, and to ground which has become packed and baked after plowing, (where other harrows utterly fail) as well as to LEVELING UNEVEN LAND.

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PARTS OF THIS COUNTRY,  
AND IN CANADA.

# "LINDEN GROVE" HERDS and FLOCKS

Again successful at the Great Show in Philadelphia, as well as at the International Sheep Show, and last, but not least, at the World's Show at St. Louis, all held in the fall of 1880. Winning at Philadelphia a total of \$2,680, as well as Silver Medals and Diplomas, the most important of which was First and Second on aged Bulls (Chelten Duke and Beauclerc), and First on Yearling Bull "Linden Butter Boy," First on imported "Lady Mary," Second on Marjoram 2d, and First and Second on two-year olds (Bennie Hinman and Blithesome), as well as the Grand Sweepstakes Prize, all on JERSEYS.

Also all First and all Second Prizes but one for which I competed, on OXFORD and SOUTH-DOWN SHEEP, and on BERKSHIRES I won nine-tenths of the Prizes, and at the Great Collie Trial my imported "Fanny," 13 months old (puppy class), won First Prize, \$50, and my imported DOG "Oscar," winner of the First Prize at Ayr, Scotland, for penning sheep, as well as numerous other prizes, was placed Second at Philadelphia in the aged class. The following is what appeared in the Philadelphia Public Record the morning following the Dog Trial:

"After the performance of the other dogs, it was a welcome relief to watch the systematic operations of "Oscar," owned by T. S. Cooper, Coopersburg, Pa. Oscar knows his work, and did it well. No driver ever held his four-in-hand under better control than did Oscar his flock of five. If an animal made a break, instead of leaving the balance to go after it, he would hurry up the four until the truant was reached. By these and similar tactics he brought the animals up to the return pen in good time and excellent condition, and received his reward in the shape of rounds of applause. "Fanny," although not fairly rested from her sea voyage, done her work so admirably that she was the admiration of every lover of a Collie, and was pronounced by the best judges to be the best and most promising female Collie ever seen. She is now six weeks gone in pup to imported "Oscar."

At St. Louis we won First Prize on "Chelten Duke," First on "Linden Butter Boy," First on imported Lady Mary, and Second on imported Sallie Bunker (both in the aged class), and First on Bennie Hinman, and Second on imported Blithesome, in the three-year old class.

On SHEEP we won every First Prize except one for which we competed, in competition with all Downs, beating several lots of fine Shropshires just imported.

On BERKSHIRES we were over-crowded when loading at Philadelphia, owing to the great heat, and we had to send all home but one, "Sallie E.'s Prince," but he was good enough to win Sweepstakes.

## I OFFER FOR SALE JERSEY COWS AND HEIFERS,

*Bred from Remarkable Milking Families.*

(Lady Mary milking *under trial* 17 quarts 10 ounces of milk in 24 hours, at St. Louis Show, being 11 years old, and after being shown three weeks in Philadelphia, and a trip of 1000 miles over rough roads, ranks her among the first.)

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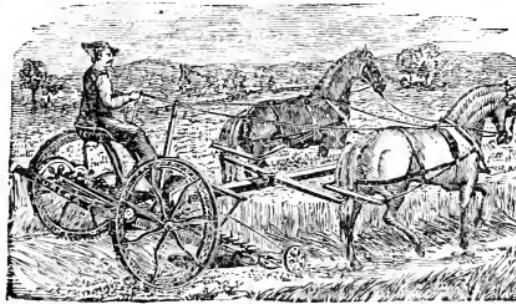
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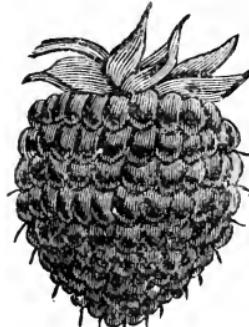
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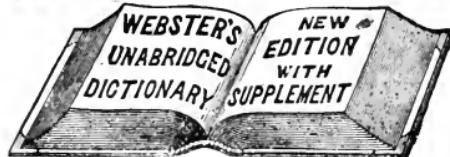
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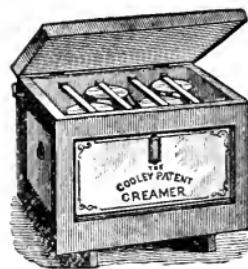
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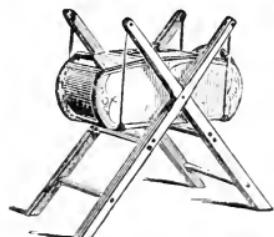
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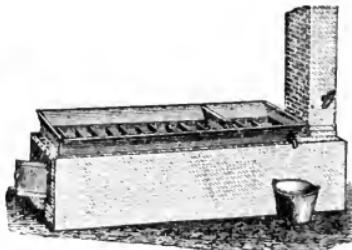
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